

Consider the `Fish.csv` data file (under the In-Class 7 assignment link). This data is public available on the [Kaggle website](#), and has information on 7 common different fish species in fish market sales. With this dataset, a predictive model can be performed using machine friendly data and estimate the weight of fish can be predicted. **In Python**, answer the following:

1. (5 points) Load the data file to you S3 bucket. Using the pandas library, read the csv data file and create a data-frame called `fish`.
2. (5 points) Using the `Length1`, `Length2`, `Length3`, `Height`, and `Width` as the predictor variables, and `Weight` is the target variable, split the data into train (80%) and test (20%).
3. (5 points) Using the train dataset, perform LASSO as a variable selector.
4. (5 points) Using the variables from LASSO regression, normalize the inputs variables of the train and test datasets using the L2 normalization. That is, for each input variable subtract the mean of that variable, then divide by the L2-norm of that variable.
5. (5 points) Using the train dataset, build a linear regression model. After that, use this model to predict on the test dataset. Report the MSE of this model.
6. (5 points) Using the train dataset, build a ridge regression model. After that, use this model to predict on the test dataset. Report the MSE of this model.
7. (3 points) Using the results from parts (5) and (6), what model would you use to predict fish weight? Explain.