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April 17, 2017
CS171 PS2

Problem 1:

First, the algorithm splits the data into a training set and a validation set to use cross validation. The first 80% of the data is the used as the training set. The last 20% is used as the validation set. Second, we create a quadratic model of the data features. Then, use a linear model and a quadratic model to compare which does better for varying values of lambda. To choose the best value for lambda we use cross validation. Using cross validation to choose lambda over 15 values ranging from 10^-2 to 10^3. All accuracies are recorded for all lambda's for both models. This allows us to see which model and lambda value combination performs the best. The highest accuracy model and lambda combination is chosen. The selected feature set is the quadratic model with a lambda value of 0.0518. This results in an accuracy of 95.25%