Homework 2

For this homework you will build your own ML models using the Perceptron and Adaline algorithms.

For this assignment, you can use either the implementations of Perceptron and Adaline algorithms from Chapter2 (available via the author's github site) or your own implementation. I encourage you to try to implement at lest the Perceptron algorithm by yourself!

Here are the specifics:

1. Create your own dataset (at least 10 examples) that is linearly separable. Now train a Perceptron model. Provide evidence that Perceptron found a decision boundary.
2. Create your own small dataset (at least 10 examples) that is *not* linearly seperable. Now train a Perceptron model. Did the algorithm converge? Provide evidence.
3. Download the Titanic dataset and randomly split it into training (70%) and test (30%) sets. Train an Adaline model using the training data. Now evaluate it on your test data. Please report your performance. You are free to use either the SGD or the batch version of Adaline.
4. What were the most predictive features of your Titanic model? Provide evidence.

Each problem is worth 25 points.

For this assignment, please submit via Sakai (1) your code and datasets you created via Sakai, and (2) a writeup addressing the questions in each problem. Please also submit a printed version of your writeup in class.

Good luck!