Homework 1
(due Monday, Feb 3rd 2014)

Naïve Bayes implementation: Implement and execute a naïve Bayes classifier on Fisher's Iris flower dataset (`http://en.wikipedia.org/wiki/Iris_flower_data_set`). The dataset contains 50 samples from each of the three classes (*setosa, virginica, versicolor*). For the choices of 10%, 30% and 50% as training data, run 10 random trials in each case. (For example, if you choose 10% for training, in each of the 10 trials, randomly pick 10% for training and the remainder for testing.) Use histograms to estimate the probability distribution of each feature given each class taking care to document the picked bin width. To document performance, evaluate and report the error on the test sets in each case (10%, 30% or 50% training data chosen and for each random trial). Document all choices including percentages of each class in each random trial and the class probabilities used.