



Today we are going to implement the Naive Bayes classifier in python language and test it on the Pima Indians Diabetes dataset. While you are free to make your own implementation, it is recommended to follow the implementation steps below and test each one to make sure it works properly.

1. **Handle Data:** Load the data from CSV file and split it into training and test datasets.
The dataset is available at:
<https://archive.ics.uci.edu/ml/datasets/Pima+Indians+Diabetes>.
2. **Summarize Data (train):** summarize the properties in the training dataset by calculate for every feature and class (prediction value) the mean and the std.
3. **Write a function which make a prediction:** Use the summaries of the dataset to generate a single prediction, which based on the gaussian distribution with the corresponding mean and std of each of the features. You can find the equation for the probability of an event given a Gaussian distribution in:
https://en.wikipedia.org/wiki/Naive_Bayes_classifier#Gaussian_naive_Bayes
4. **Make Predictions:** Generate predictions on the whole test dataset.
5. **Evaluate Accuracy:** Evaluate the accuracy of predictions made for a test dataset as the percentage correct out of all predictions made.
6. **Tie it Together:** Use all of the code elements to present a complete and standalone implementation of the Naive Bayes algorithm.
* (Optional) Try building it into a class with fit(train) method which calculates the mean and std, and predict(test) method which makes a Naive Bayes prediction for the test data.

We are going along the instructions from the following link:

<http://machinelearningmastery.com/naive-bayes-classifier-scratch-python/>