School of Computer Science and Engineering, VIT Chennai.

BCSE209P Machine Learning

**Lab-6 Naïve Bayes Classifier**

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Submit your **python code (Jupyter notebook):** with output for all the questions.

**Q1. Play Cricket**

Suppose you want to build Naïve Bayes classifier for predicting whether a cricket match will be played in the given weather conditions or not. Here the weather conditions are described by features outlook, temperature, humidity and wind. The target is play with two class labels *Yes* and *No*. (Dataset: play.csv)

1. Implement Naïve Bayes classifier which must
   * Print the class prior probabilities form the training set
   * Classify the test sample <Rain, Cool, High>. Need to print likelihood for <Rain, Cool, High> and also class conditional probabilities for “YES” and “NO” classes.
2. Use sklearn CategoricalNB to validate the results obtained above.

**Q2. Music Emotion Recognition**

Assume you need to build a classifier for recognizing emotional content in music signals such as Mel Frequency Cepstral Coefficients (MFCCs), Tempo, Chromagram, Spectral and Harmonic features. There are four different classes of music emotions in the dataset: happy, sad, angry, and relax. (Dataset: music.csv)

* Choose a suitable Naïve Bayes classifier model from Sklearn to perform the above task.
* Need to show all the pre-processing steps (normalization, encoding etc)
* Report accuracy