**Assignment #3 (python)**

**(20+20+20 marks)**

Dataset(Car \_evaluation) uploaded on lms in resources/datasets folder

Dataset description

Car Evaluation Database The model evaluates cars according to the following concept structure:

Attribute Information:

Class Values:**Decision :**unacc, acc, good, vgood

Attributes with values:

**buying**: vhigh, high, med, low. **Maintenance** **cost**: vhigh, high, med, low.

**No of doors**: 2, 3, 4, 5 more. **Persons capacity:** 2, 4, more. **lug\_boot size**: small, med, big.

**safety:** low, med, high.

Apply **naïve Bayes classifier, decision tree** and **k-means clustering** .(K-means will be taught in class on Tuesday).Apply appropriate parameters that should be reported .Like weather Gini index or cross entropy for decision tree , value of k for k-means while considering it unsupervised etc.

Python-Sklearn have these models implementation and metrics

**Report accuracy, F1-score and confusion matrix, ROC curve for the above models.**

**Also, Cluster diagrams for k-Means**

Submit a python code file and a report that should include model settings, train-test splits and diagrams.