**Instructions Lab 3\_1**

You have learnt how to build univariate decision trees. One of the important issues is to consider pruning the tree in order to avoid overfitting. In this lab you will experiment with pre-pruning using the following strategy:

Limit the depth of the tree. First grow the full tree and check the accuracy on training and test sets (separately). Note the maximum depth.

Now iteratively reduce the depth by 1 and check the accuracy on training and test set.

Plot a graph of the accuracies versus the tree depth.

Analyze the graph and determine the optimal depth for the data set.

Use Gini Index as the impurity measure. Use the breast cancer data set that you have used in your previous labs.

**Show your work, even if it is partial, during the lab hours. What you show during the lab will contribute toward your final grade.**