BIRZEIT UNIVERSITY

COMP4388: Machine Learning
Fall 2024/2025
Project 1: Decision Tree Learning

In this project you will implement a Decision Tree algorithm. You should implement the decision tree from the scratch including the **Entropy**, **Information gain**, and **Gain Ratio**. Please do not import libraries from other machine learning algorithms and run it!

You can use Java or C to implement this assignment.

As for testing, you can try it on the Mushroom dataset (you can download it from: https://www.dropbox.com/scl/fi/v03uf6917up9qqcpyth7n/mushroom.csv?rlkey=5p39t3ssq22z0914kdw7unchv&dl=0). The target class of this dataset is Edible (true or false).

You should provide the code in your submission as well a running interface of the algorithm (draw the decision tree or write it on the command prompt). Having provided the training and test set (you should split the data into training and test), your program should also provide the classification accuracy, precision, recall, and f-score of the test.

The deadline of the assignment is 3 January 2025. A message will be sent on Ritaj so that you can submit your code. The discussion time will be announced later.

If you have any questions, please feel free to ask during the lecture or by contacting me via Ritaj or email: rjarrar@birzeit.edu

Good luck!
Dr. Radi Jarrar