Implement a decision tree using the ID3 algorithm (from scratch). You may use any programming language that you like.

Test it on at least 2 data sets. You may use any data sets. For example. The UCI datasets page includes many excellent ones: [http://archive.ics.uci.edu/ml/datasets.php (Links to an external site.)](http://archive.ics.uci.edu/ml/datasets.php)

In addition, it is highly advised to test your algorithm on some of the small examples that we did in class, in order to make sure that the implementation is correct.

**It is essential to analyze the accuracy of your algorithm on both your test and training data, and determine whether your algorithm is overfitting.**

The above can earn you a grade of us to a B. To reach up to a grade of A+, you need to complete at least one of the following:

* Implement random forests
* Prune your decision tree

Then, compare the improved method against a decision tree without the improvements. There is *no need* to compare against any ML algorithms found in packages. Summarize your findings in table/s.

Prepare a presentation on your project. The presentation should be succinct. Make sure that slides are sparse. Please do not include material already taught in class. Simply describe what you’ve done, the data you used, and show your findings. Presentations are up to 10min long, ***including a live demo of your code***.

Make sure that your code is legible, and includes comments at the start of each method and wherever further explanation is needed. Make your code modular, and name your variables/functions/classes in a meaningful way. *Please do not make your code publicly available.*