Group coursework 1

- Please upload 1) a Python/R script for Shiny, 2) the dataset and 3) your report in **one pdf file**. Please also include the total number of words on the front page of the report.
- Make sure that you have included **sufficient** comments in the codes to make them **readable** by other people. There should be **no error messages** shown when I run your scripts from top to bottom.
- This coursework will be assessed based on the quality of the app, e.g. whether the layout is clear, whether it's user-friendly and whether the classifiers can be explained clearly via the app, and the quality of the report, e.g. presentation, writing and quality of plots.

Question 1 [**25 marks**] Design your own Shiny app that can visualise decision tree and random forest. The aim of this app is to present to your clients with little knowledge about machine learning, on how decision tree and random forest work and what are the conclusions of your analysis of the data. Note: 1) You can use any dataset that you like, but please make sure that the dataset is with less than 500 observations and 50 features for illustrative purpose. If you find a large dataset that is interesting to analyse, please down-sample the dataset to fit the criterion. 2) You can't use Python/R libraries that include Shiny apps to visualise decision tree and random forest from other authors.

Please also write a report to show 1) the task of the dataset, 2) how you design the app and how it works and 3) your analysis of the results obtained from the two classifiers. The report should be no more than 1000 words. You will get a penalty on the report if you exceed this limit by 10%.