=> Machine Learning Assignment 3 <=
100 MARKS

If you have any problems with this practical assignment, speak up well before the deadline!

Deadline

Submit on RuConnected by **2pm** on **Monday 27 May 2019 (hard deadline!)**.

Task: Preparing for the Final Boss [100 Marks]

1. Code a single program that reads in a binary-class dataset and allows the user to specify the **binary** classifier with a --classifier command line argument.
    - The program must support the following classifiers with default parameters:
        - k-Nearest Neighbours
        - Naive Bayes
        - Logistic Regression
        - Linear SVM
        - Decision Tree
        - Random Forest
        - Multilayer Perceptron
    - Also include the following functionality:
        - The data points must be visualized to show how the two classes are separated
        - Score the accuracy, precision and recall of a classifier
        - Compare the accuracy, precision and recall of two classifiers by plotting a bar graph. The user must be able to specify: accuracy, precision and recall, as the determining factor for selecting the best classifier.

TL;DR and Clarity on what needs to be outputted: Be able to take in one or two classifiers as command line arguments. If only one is specified score the accuracy, precision and recall. If two classifiers are specified, draw the bar graph(s) the way you think is best for comparing accuracy, precision and recall.

I am lenient on presentation, so do not bother asking if your program looks 'right'. This is a final boss prac, and it may be disappointingly easy for many of you.

Hint: Use Lecture 9 code for the datasets part. You may (and probably should) use some of the previously learnt methods for reading in the dataset, and determining the best classifier, e.g. grid search. You are not limited to what I lectured. Use your imagination and do research.