=> Machine Learning Assignment 1 <=
30 MARKS

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

Deadline

Submit on RuConnected by **2pm** on **Monday 13 May 2019.**

Task 0: Set up your environment

Here are the recommended package versions:
opencv >= 4.0.0 (important)
sklearn == 0.20.3 (important)
scipy==1.2.1
matplotlib==3.0.3

Remember your exam environment will be a debian-based linux running on a virtual machine.

Task 1: Linear Regression [3 + 2 + 2 + 4 + 2 = 13 Marks]

For questions b-f, be concise. You only need about one to three sentences depending on the mark allocation.

a. Modify 3_4_Linear_Regression.py to use ridge regression.
b. How does the generalization error change?
c. How does the prediction plot change?
d. Are there any improvements in performance?
e. Do the above answers change when using lasso regression. Explain the difference in performance, if any.
f. Does the application of one of these two loss functions always improve performance? **Hint:** play around with the training/test set split percentage

Task 2: Logistic Regression as a Classifier [17 Marks]

Modify 5_Logistic-Regression_Classifier.py to build a model using scikit-learn instead of OpenCV, while maintaining the same functionality.