**Home Work:**

The main objective from this homework is to try hard to code before the practical session.

You do not have to deliver a complete working code, but you have to provide very good trials.

Your effort should be seen in the code. Do not copy and paste ready code from the internet. Try to do it yourself. However, you can explore the ideas to help you doing your task.

If you do not try hard in the homework, the practical session will not be easy for you.

Remember, last practical session is evaluated and based on the work performed in the previous ones.

*Always remember: You have to work hard in Math and Code in order to be successful in this diploma and later in your career.*

- If we have the data points (x_points, y_points) with
  x_points = [1,1,2,3,4,5,6,7,8,9,10,11]
  and y_points = [1,2,3,1,4,5,6,4,7,10,15,9],
  use the GD algorithm to find the best values for theta0 and theta1
  (having **y = theta0 + theta1*x** the equation of a line that should fit the data points).

- Explore the following to be ready for the practical session (write simple example for each one to demonstrate your ability to use it):

  - How to import NumPy library.

  - Matrices and vectors operations using NumPy.

  - How to import matplotlib.pyplot.

  - How to make matplotlib inline.

  - How to read data from csv file to NumPy array.

  - How to select a specific column from NumPy array (very important).

  - Using Matplotlib Scatter plot to plot (x,y) data.

  - Using Matplotlib to plot a straight line.

  - Using r2 score from sklearn.metrics to evaluate prediction performance.