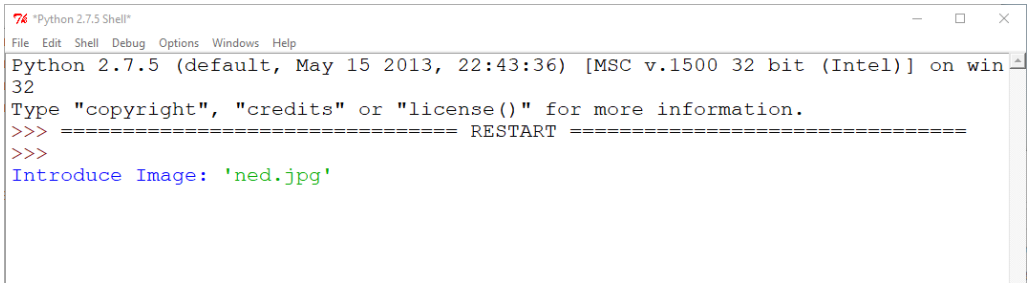
·You have 2 weeks to complete the assignment.
· If the code has errors, the exercise won't be accepted for submission.
· Some examples are provided to check if your code is correct.
· If your application does not produce as a result the images provided as examples, it won't be accepted for submission.
· Code is expected to be readable, clean and optimal.
· To submit the exercise, change the name of your python file to **"lastname1_name1_and_lastname2_name2.zip"** (surname and name of the two students) and upload it to the "**Project 1"** folder.
· No submissions will be accepted after the 23:59:59 of March 19th

Implement an application that compute the gradients of a given image by using the Sobel operator. Take into account the following considerations:

- The application loads the input image in greyscale and computes the horizontal, the vertical derivative and the gradient from both of them.

- You must allow the user to introduce the input image. For instance:

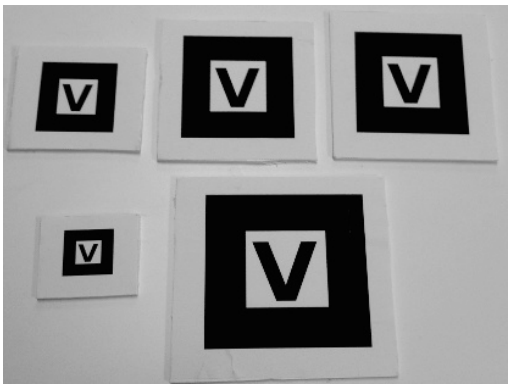
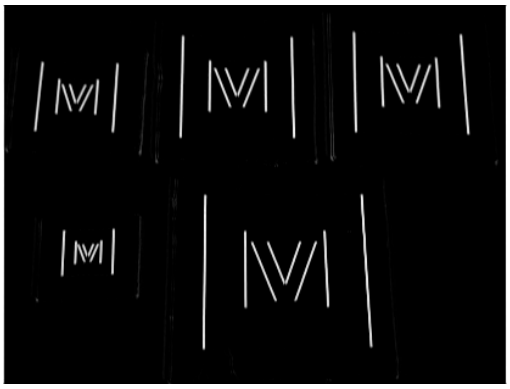


- As a result, the application must show in different windows:
  - The input image
  - The horizontal derivatives image
  - The vertical derivatives image
  - The gradient magnitude image.

IMPORTANT!!

You must use python as a programming language and **you cannot use the *opencv* methods** (or other packages) **to do the work**. The only *opencv* methods that you can use are the ones in charge of loading an image (*imread*), showing an image (*imshow*) and managing the input from the keyboard (waitKey and destroyAllWindows). Use numpy arrays for the kernels and output images.

Example of the images that your application must show:

Input image (greyscale)	Horizontal derivatives
	

Vertical derivatives	Gradient magnitudes