First Laboratorial Work

I. Statement

I would like to stress that this first work is "open". This means that, although I give some ideas/suggestions or clues about the output of the algorithm, the students are free to do more if they intend to do so, thus exploring the subject herein addressed.

There are four images available in the discipline (see MATERIAL/database), named "moedas1", "moedas2", "moedas3" and "moedas4", as Fig. 1 illustrates. These images were acquired, putting some objects on the top of a table, with a blue homogeneous surface. The camera was placed such that the sensor plane is parallel to the table surface.

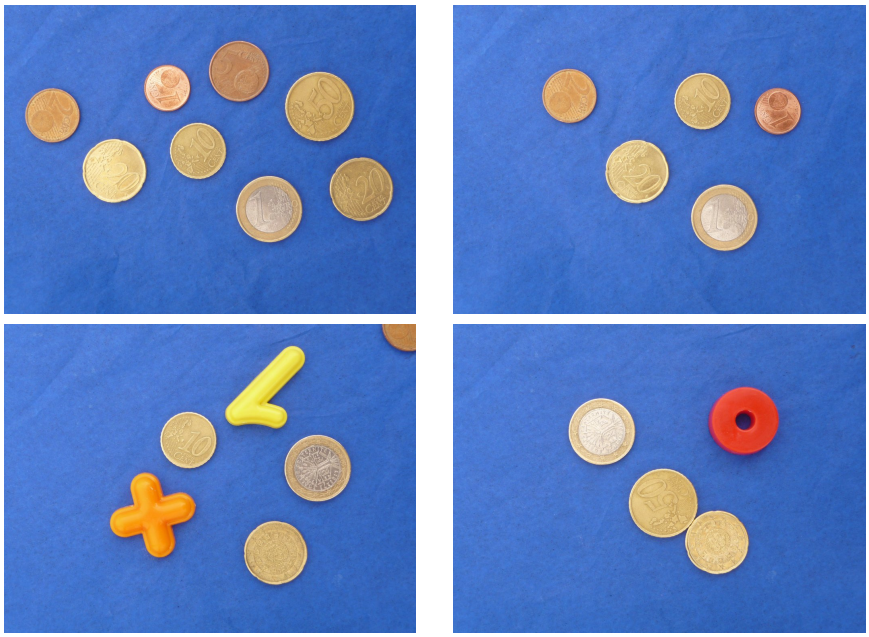

Figura 1. Four images containing some coins along with other objects.

The goal is to explore the contents of the images, performing a pattern recognition. Also, it is intended to provide information visualisation of the images. Here it goes some suggestions. Given the above images, you can provide the following information:

1) The number of objects contained in each image
2) Visualization centroid, perimeter and area of each object
3) Relative distance of the objects
4) Derivative of the objects boundary
5) Ordering the objects depending on the, area, perimeter or sharpness
6) Compute the amount of money etc ...
7) From a user selection of given object (the user should select one object), generate a figure that shows an ordered list of objects, *i.e.* from the most similar to the less similar of the chosen object. The similarity criteria can be one of the previously computed features.

Notice that the four images above are used for training. During the evaluation I will test your work in a different test set of images. The test images are not seen by your algorithm, nevertheless they are similar to the training set.

The deadline is **Sunday midnight April 22th**. So please, send me the zip code with the number of your group, (e.g. **"G11.zip"**, that stands for the zip of the group 11). The address is the following **`jan@isr.ist.utl.pt`**.