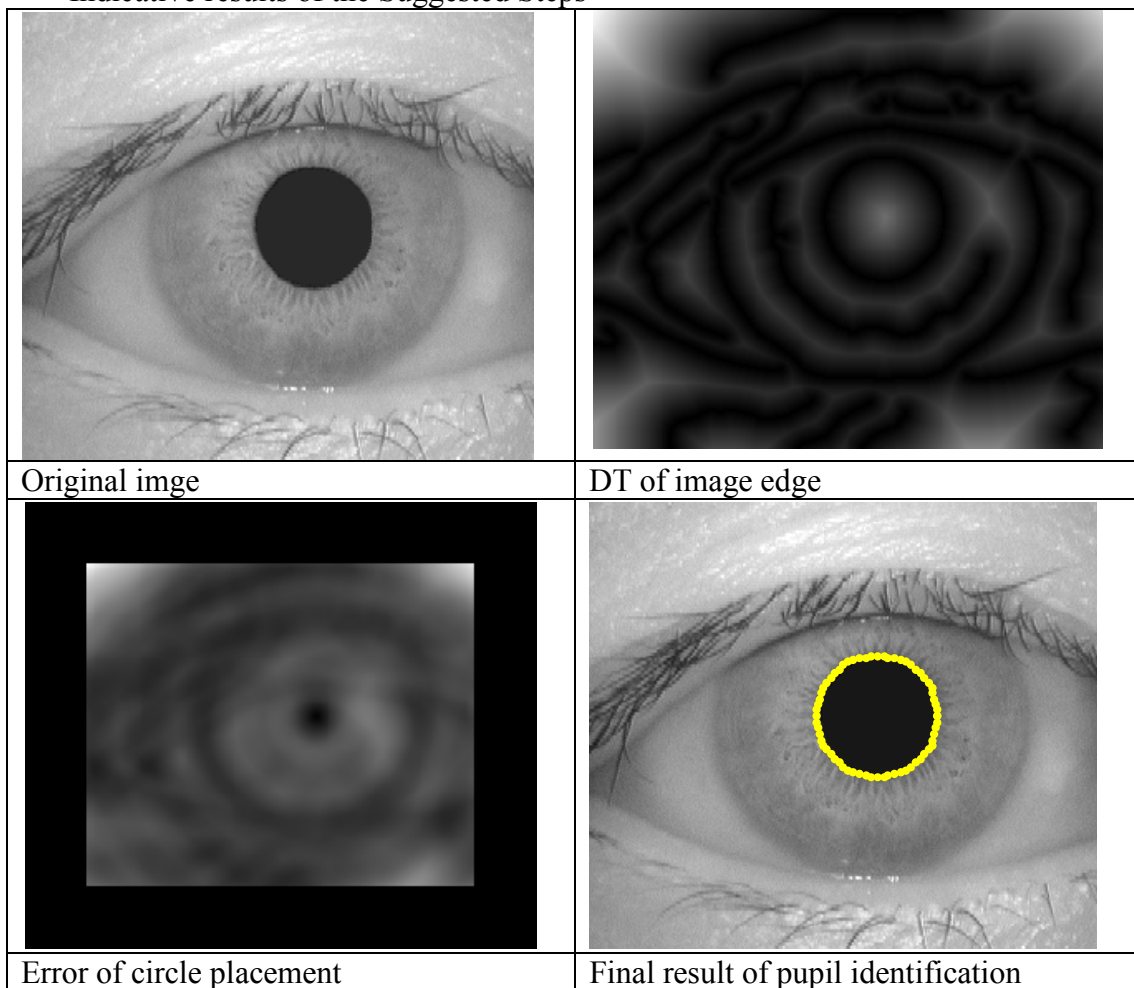**Automatic localization of the pupil in images of the iris**

The purpose of the exercise is the localization of the pupil in iris images. The pupil is to be considered as a circle, whose parameters (center and radius) are to be determined.

Suggested Steps

1. Import the image
2. Perform edge detection
3. Calculate the coordinates of a circle, using a s parameters the coordinates of its center and its radius
4. Perform distance transform (DT) on the edge image
5. Use either exhaustive search, or a function minimization to determine the parameters of the circle coinciding with the pupil. Use realistic ranges for defining the search space of the 3 circle parameters

Indicative results of the Suggested Steps

Original imge	DT of image edge
Error of circle placement	Final result of pupil identification

Instructions

You should submit the following using the e-class (not by email):

The source code, with clear comments and a report with all your results, as well as detailed explanations.

The source code should execute and produce identical results with the ones submitted.

You may use functions from software libraries. You may be orally examined over your code and results, so, do no use functions / parts of source code you do not understand.