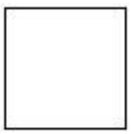
TP 4 - Transformée en distance

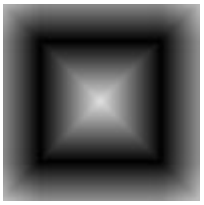
The objective of this lab is to implement the distance transform for the recognition of simple hand-drawn shapes.

I. Modelling



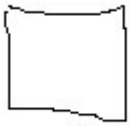
« square » produced with an editor

1. In an editor (word, powerpoint, paint, etc), produce 3 images of 100 by 100 pixels representing respectively a square, a circle and an equilateral triangle. Make sure that the shape is centred and does not touch the edges of the image. **Give these images in the report.**
2. Load these 3 images into Matlab and binarise them so that the pixels of intensity 0 represent the background and the pixels of intensity 1 represent the shapes.
3. **Produce the distance transform of these 3 images using the chamfer mask of your choice. Specify the mask you have chosen.**



Distance transform of the « square"

II. Reconnaissance



"square" produced with the mouse

1. In an editor (word, powerpoint, paint, etc), draw freehand with the mouse the three shapes (square, circle or triangle) in three distinct images of 100 x 100 pixels. **Give these images in the report.**
2. Load these images into Matlab and binarise them so that the pixels of intensity 0 represent the background and the pixels of intensity 1 represent the shape.
3. Calculate the best score and the best matching rate by comparing each of these shapes with the 3 models previously calculated. **Present the results in a table. Identify in each case the model producing the best results.**