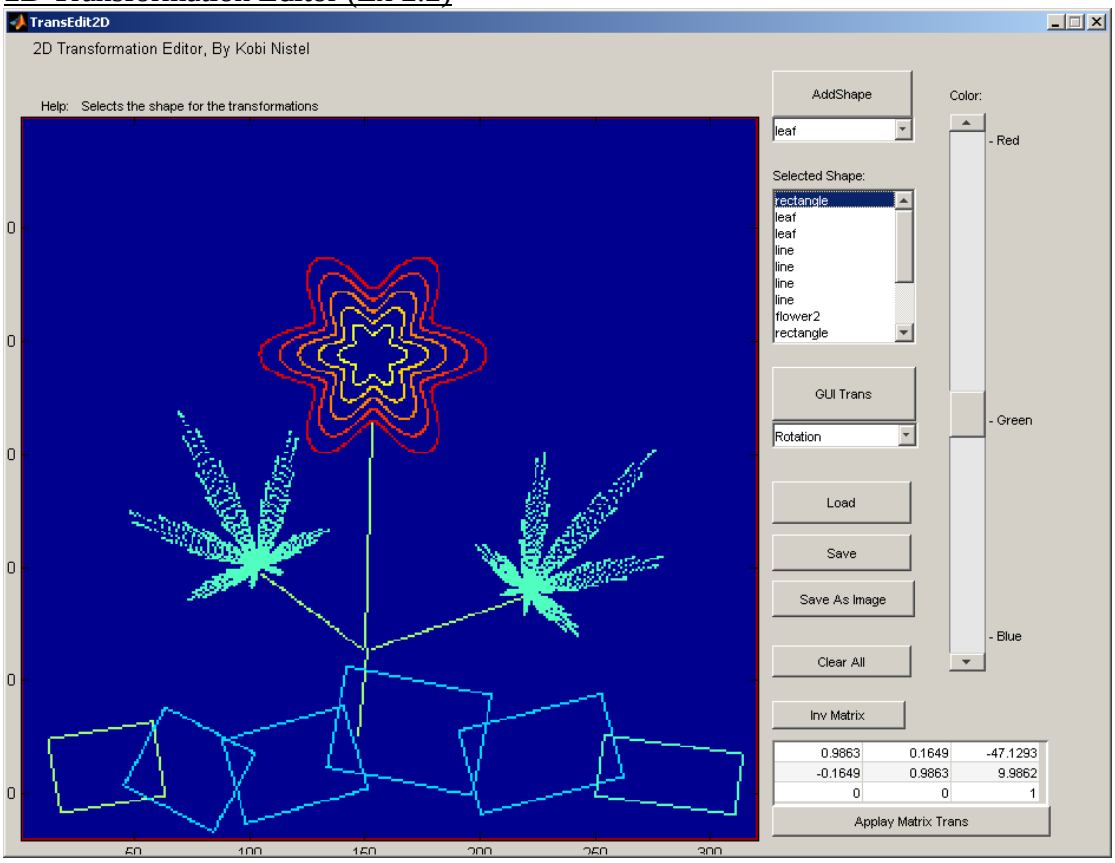
2D Transformation Editor (Ex 2.2)



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2D Transformation Editor V0.5 is a program in which you can place rectangle, ellipse, line and other shapes. The shapes are represented in Homogeneous coordinates as a collection of pixels. Linear transformations are implemented by multiplying the shape points by the transformation matrix.

To add a shape click on the AddShape button and click 2 times on the canvas signifying the bounding box. You can select which shape to add by clicking the pop up menu under the AddShape button. You can select the color of the shape in the colorbar, note that the shape will be drawn in red. this indicates that this shape is selected.

You can select different shapes form the Selected shape list box, any transformation will apply on the selected shape.

There are two ways to preform a transformation on a selected shape by clicking on Gui Trans button or by clicking on the Apply Matrix Trans button.

When clicking on the Gui Trans you will asked to click on the canvas 2 or 3 times to indicate the transformation parameters.

The transformations are:

Translation: you will need to click on a point and a point to move it to.

Rotation: the first point will indicate the axis of rotation and a second. The degrees of the vector formed is the degrees of the rotation, meaning clicking up of the first point will rotate the shape in 90 degrees.

Sheering: the first point will indicate the center and the second will detriment the sheering factor, the dx form center is Sx and dy from center Sy.

Scaling: you will need to press on 3 point, the first is the center the second will form a reference vector and the 3erd is the new size relative to the reference vector.

If you have any problems or want other transformations contact me ☺.

After that the transformation will be applied on the selected shape and the transformation matrix will be displayed below.

You can undo the last transformation by clicking on the Inv Matrix and Apply matrix Trans buttons.

You can apply your own transformations by editing the matrix and applying with the Apply Matrix Trans button, note that the transformation will be done relative to the origin. I plane to add an option of applying the matrix transformation relative to shape center.

You can save or load paintings with the save/load buttons. You can also save the paintings as an image with the Save As Image button. Note that all loading and saving are done in the Trans Edit Directory.

I used Matlab 2010b (7.11.0) .

All the software is mine and I didn't use any code from other, it did took a long time.

If something is not clear or you have any advice, contact me at:
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You can take a look at a similar program I wrote but not in Matlab:

http://www.youtube.com/watch?v=o8vfJGZcsC8