Discovering GANs - Generating the dataset

Structure de quadrilatères, Vera Molnar, 1985

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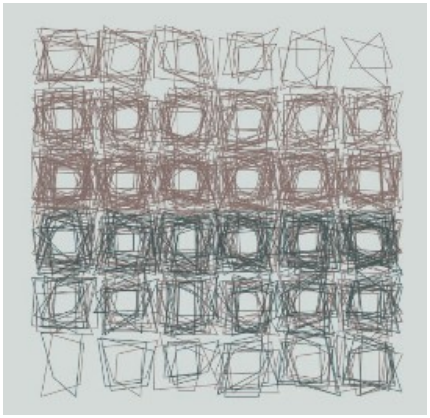
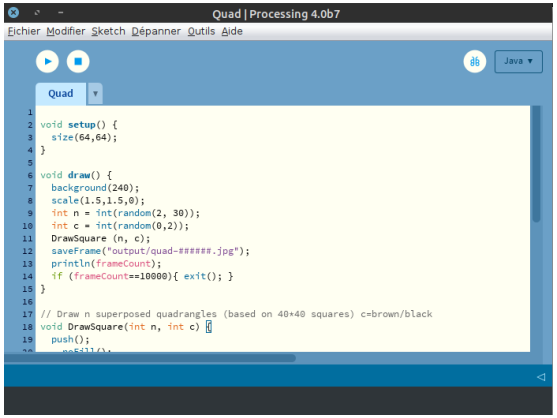
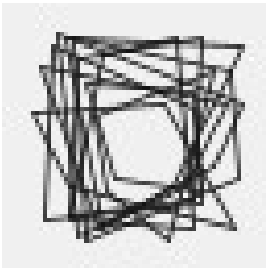
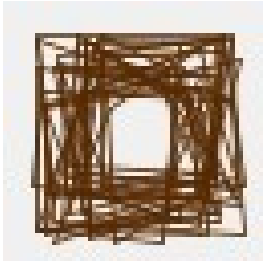




In the recoding project, to produce a 6*6 grid, our original code already contained a function which drew a unique cell (= several **quads** drawn over the same center).

We juste adapted it in Java in Processing to produce 10 000 different isolated shapes : each is **randomly black or brown** (1/2 chance) and contains from **2 to 30** (1/28 chance) quads. For the GAN to read them better, we also increased the contrast of colors and the thickness of lines.





$$N = 2\left(\prod_{i=2}^{30} 27^{(2*4)}\right) \simeq 10^{320}\ possibilities$$

Black or brown * we superpose from 2 to 30 quads * 27 possible values for each x and y of 4 vertices of each quad (they vary by (-12,-12) to (+15,+15) from the original positions of regular square)