

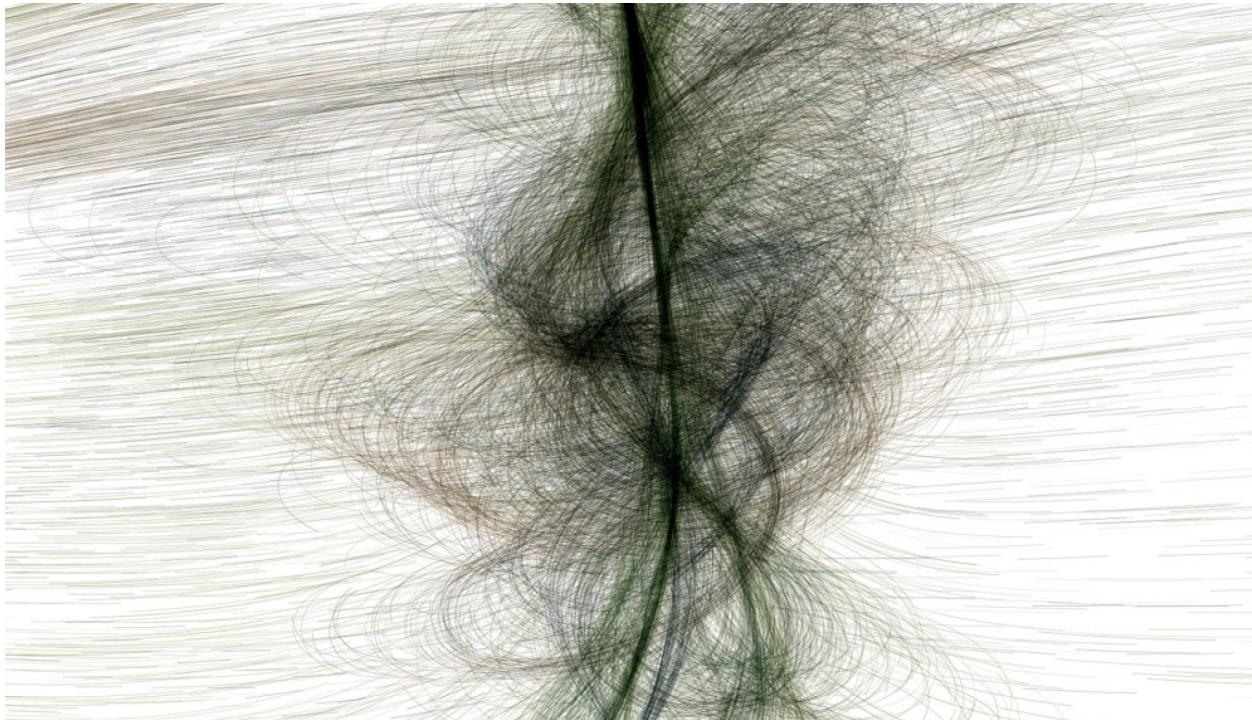
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Fall 2023
ARC180

ASSIGNMENT 3

PROCEDURAL DRAWING
Algorithmic Design with Processing



Casey Reas

Generating complexity for complexity's sake is similar to shouting complete nonsense at the top of your voice. Both are embarrassments that are best avoided, but when you are young it is the best way to attract attention.

- John Maeda

DESCRIPTION

This semester, you have been introduced to the artwork of several artists that use **algorithms** to create their art, for example: Sol LeWitt, John Maeda (1), and Casey Reas (2). In this assignment you will create a drawing with *Processing* (3). The goal of the assignment is to leverage the advantages of computation / algorithmic design to create a complex composition that could not have been achieved drawing by hand or with traditional methods (4).

In this assignment you will create your own algorithmic design. Start with using simple geometric elements such as the **line()** or **ellipse()** command in *Processing*. Explore different values of **RGB color** and **transparency** for your geometric elements using **stroke()**, **noStroke()** and **fill()**. Your algorithm must incorporate the concepts of **variables**, **looping**, and **conditional statements**. Your algorithm should also contain at least one **function**.

Procedural art, or artwork defined by a computationally represented system of rules, relationships, and behaviors, enables creation of works that are flexible, adaptable, and capable of systematic revision (6). This assignment asks you to use *Processing* to create a *procedural drawing*. This is a drawing that is created by an algorithm. Using **saveFrame()** you will submit an image of your procedural drawing.

As a designer, how you start and how you develop your ideas is up to you! However, for this assignment you are required to work with both sketching drawings by hand and sketching code in *Processing*. Part of the assignment is for you to communicate your design process. Please keep a record of some of your important hand sketches, and some saved images of output from early *Processing* sketches.

SUBMISSION

Part 1 – Sketch

Submit a selection of your sketches and process images as a PDF file formatted to 8 ½" x 11" portrait format. There may be multiple pages in your PDF. These pages should contain hand-drawn notes and sketches as well as images from *Processing* of early iterations of your design.

Part 2 – Algorithm

Submit a written algorithm that generates your drawing (or at least one iteration of it). This simple set of instructions should be imagined as instructions to an artist or architect who will draw your composition. The algorithm is to be written in words – not computer code. You should use a word processing program to write your algorithm. Submit the algorithm as a PDF file formatted to a single sheet of 8 ½" x 11" portrait format.

Submit parts 1 and 2 to TA November 23rd

Part 3 – Code

Submit your Processing .PDE file. Please submit the version of your processing file that is used to generate your drawing (Part 4). Make sure that your submitted .PDE file will run! You will lose marks if you submit a .PDE file that doesn't work. Please submit code that is organized and includes comments on who created it and how it is to be used. You will lose marks on code that is not organized well and that does not include comments.

Part 4 – Drawing

Export your final drawing from Processing. Submit a .PNG image with resolution 1200x900 pixels.

Submit to Quercus Assignment Page on November 30th

References

- (1) John Maeda, 2004. *Creative Code*, London: Thames & Hudson.
- (2) Casey Reas, 2006. "Process/Drawing," in *Architectural Design Journal (AD)*. John Wiley & Sons.
- (3) <https://processing.org/reference/>
- (4) Kostas Terzidis, 2006. "Algorithmic Form" in *Expressive Form: A conceptual approach to computational design*. Spon Press.
- (5) Jennifer Jacobs, 2017. "Dynamic Drawing: Broadening Practice and Participation in Procedural Art," PhD Thesis, Boston: MIT.

SUBMISSION NOTE:

By submitting this assignment, you confirm that this assignment represents entirely your own efforts and adheres to the Code of Behaviour on Academic Matters. You confirm that you have not acted in such a way that would constitute cheating, misrepresentation, or unfairness, including but not limited to, using unauthorized aids and assistance, impersonating another person, or committing plagiarism. You understand that ARC180 will enforce these policies and sanctions.

DUE 30 November 2023. Please upload all five parts to Quercus by the end of the day (midnight).