

Creative Coding

Generative Art Paradigms: Randomness

COD 207 - Week 05 Class →



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Wrap-up (Summary)

Things we learn about P5JS programming language.

Variables

```
var xpos
```

Styling shape properties

```
stroke() , noStroke() , fill() , noFill()
```

Computational Thinking

```
Decomposition , Pattern Recognition , Abstraction , Algorithm Design
```

Conditional Statements

```
If (xpos > width) {...}
```

Computational Thinking Framework

- 1 Decomposition
- 2 Pattern Recognition
- 3 Abstraction
- 4 Algorithm

Generative Art Paradigms: Randomness



Generative Art Exploration Chapter I Tracing the Roots: The History of Generative Art



Paylaş



İzlemek için:  YouTube

Randomness

Randomness can manifest in various ways and is a fundamental concept in fields such as mathematics, statistics, science, and philosophy.



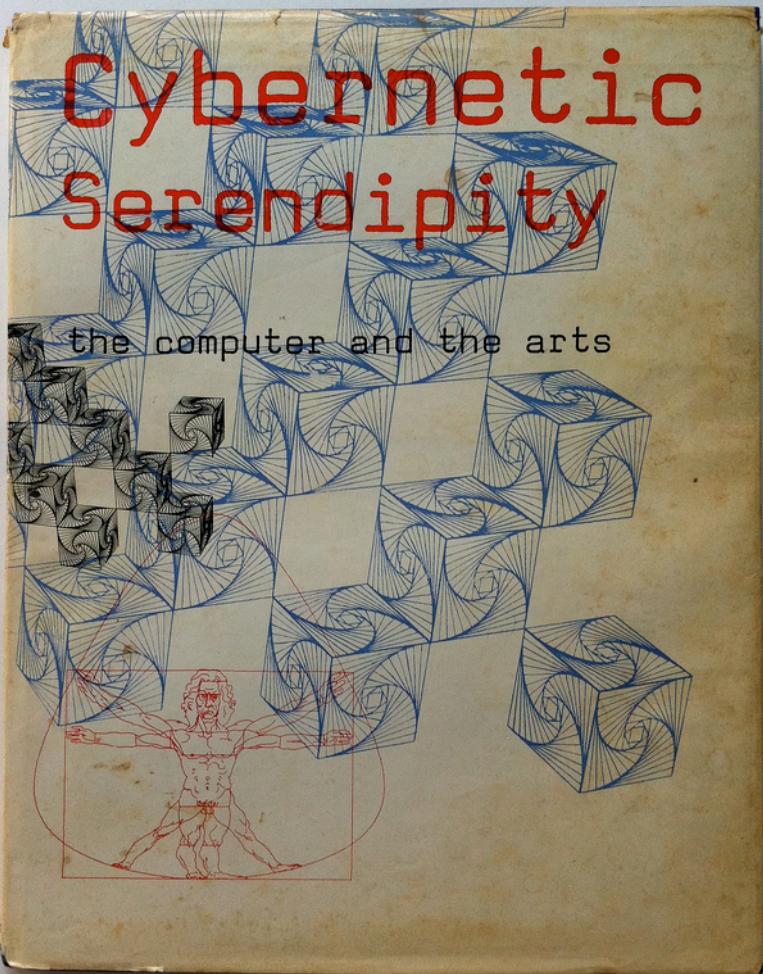
Deterministic

Deterministic in principle, random in practice (E.g Weather)



Stockhastic

True randomness (E.g Rolling dice, toss a coin...)



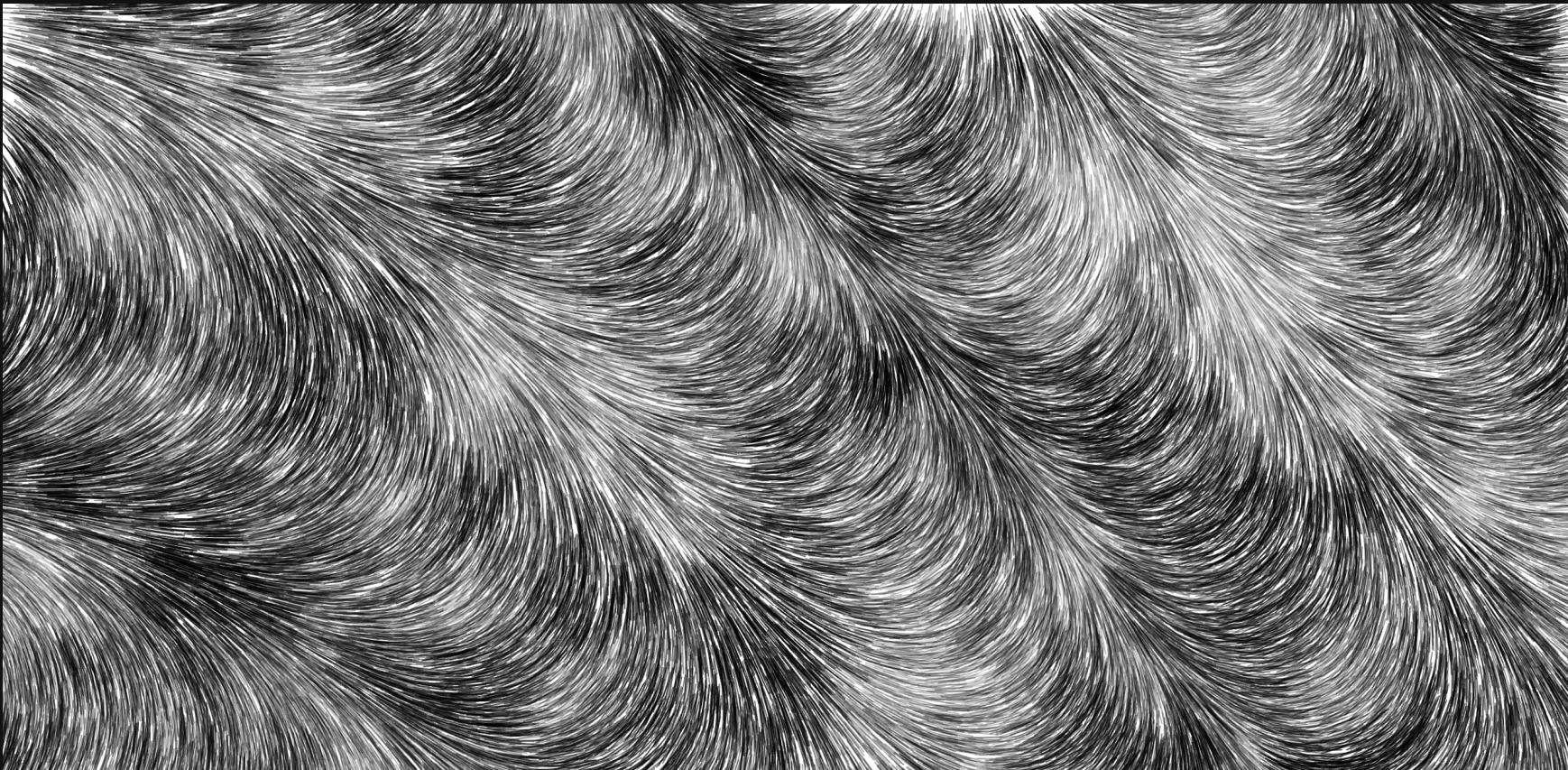
Randomness in Generative Art

Randomness plays a significant role in generative art, where it can be used as a creative tool to introduce variability, unpredictability, and serendipity into the artistic process.

- 👉 Organic patterns and textures.
- 🎨 Unique compositions; Altering position, shape, color, or texture instantly.
- ♾ Alternative variations
- ♻️ Combining with iterative actions
- 📽 Dynamic Content Creation

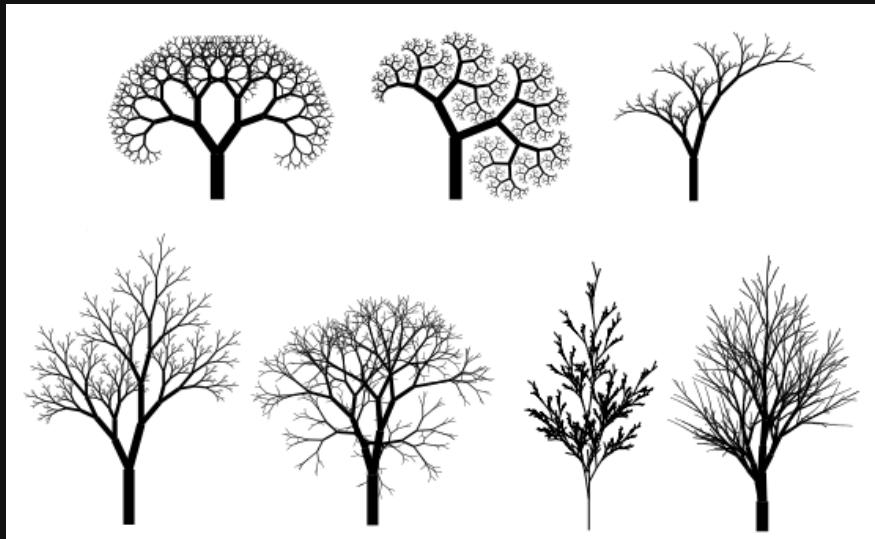
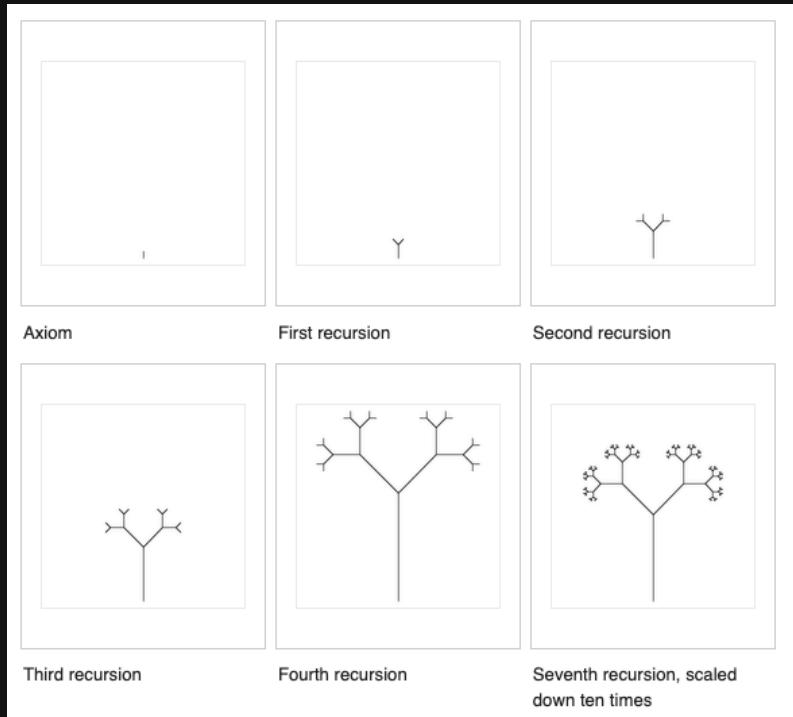
Perlin Noise

[Link to Sketch](#)

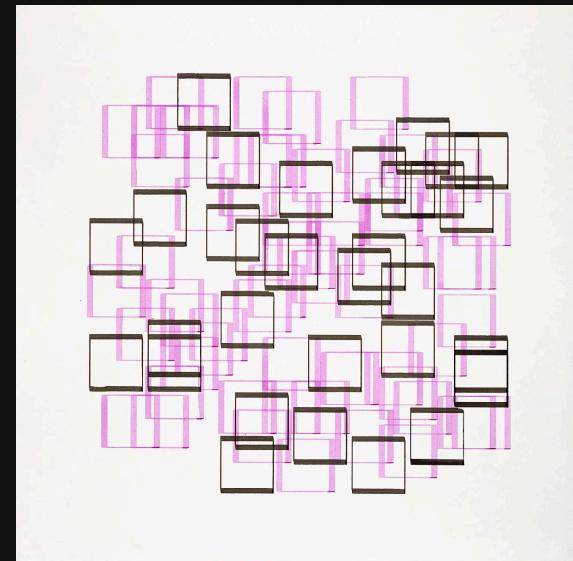
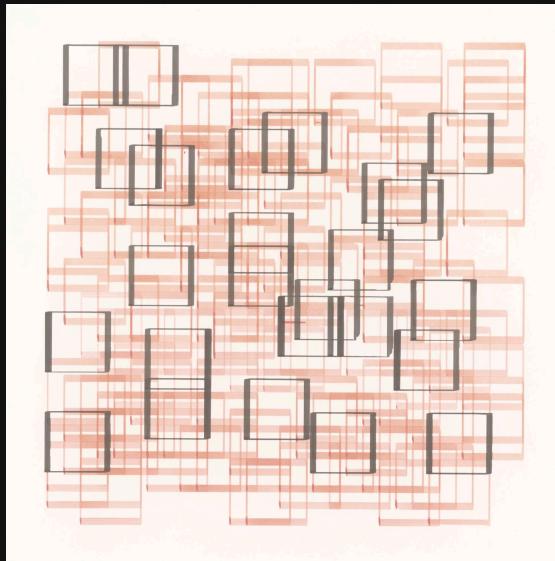
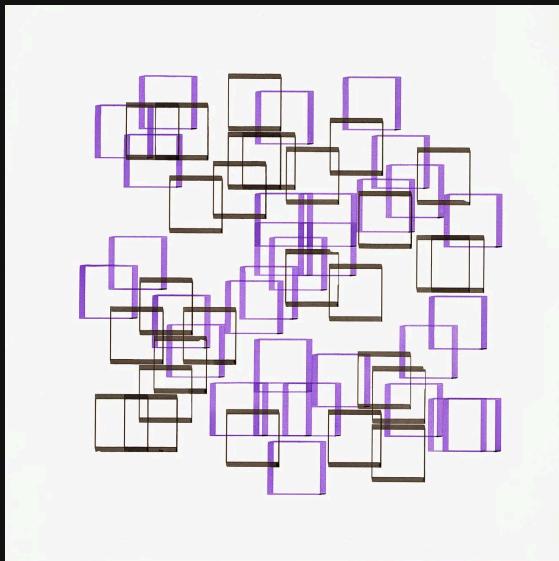


L-Systems, Iterative Actions

An L-system or Lindenmayer system is a parallel rewriting system and a type of formal grammar. Ordered distribution of instructions. (ref: [Wikipedia](#))

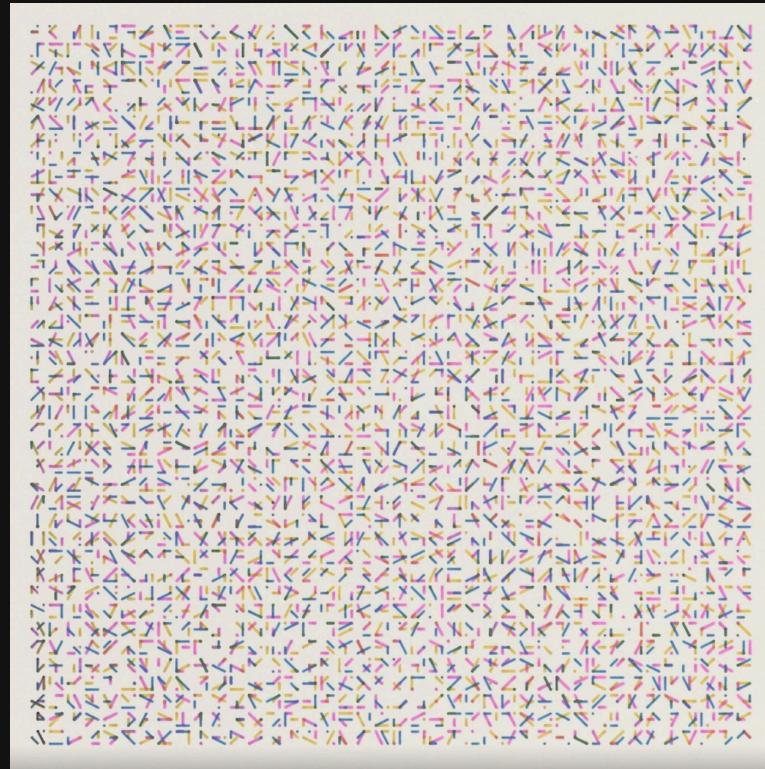


Alternative Variations



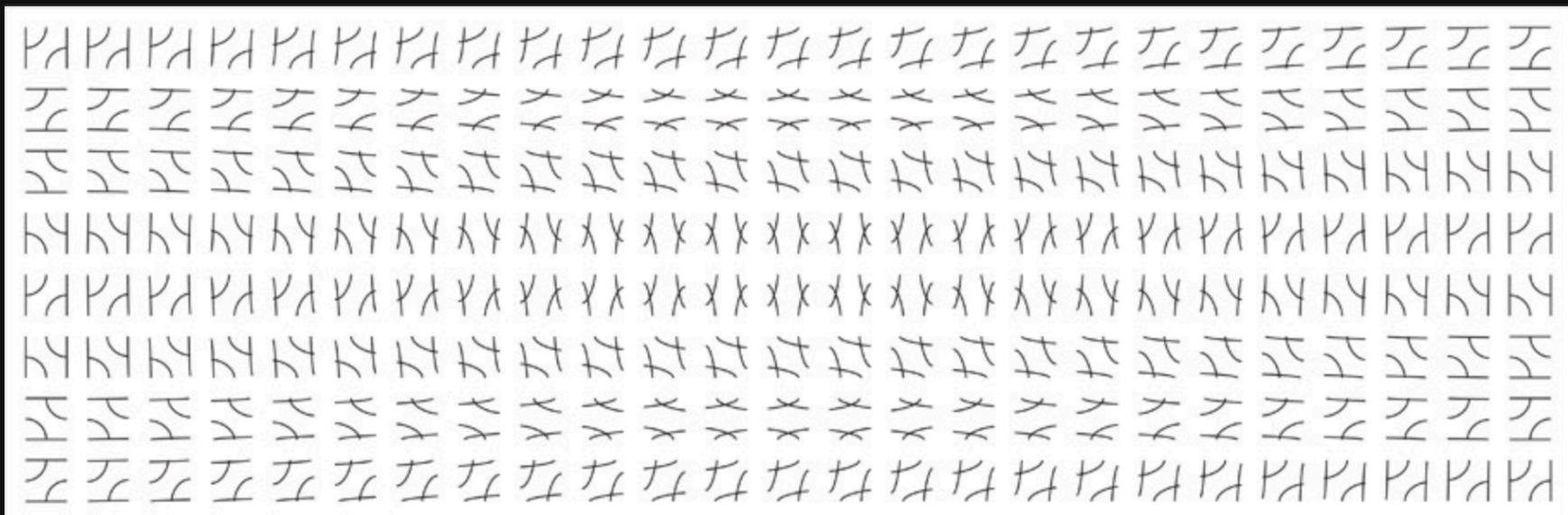
Frieder Nake, Walk Through Raster, 1966

Alternative Variations



Peter Beyls, Untitled, 1981

Iterative Actions



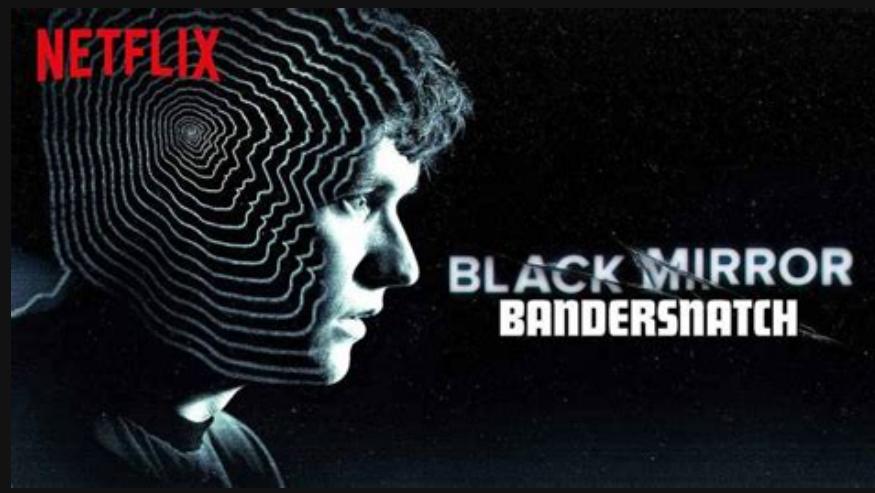
Paul Brown, Long Loop, 2000

Iterative Actions



Masao Komura and Kunio Yamanaka, Return to a Square, 1968

Familiar?





The Root



Paylaş



İzlemek için: YouTube

Random Function In P5JS



BREAK

10 mins.

Algorithmic Art Praxis (ALAP) Database

link to ALAP Database

Gallery view Table +

Algorithmic Art Repo (1920-2000) ...

↑ Created ▾ Praxis: Tiling ▾ Artist: Vera Molnar ▾ Classification ▾ Medium ▾ # Date ▾ Bookmark Reset Save for everyone ▾

Vera Molnar
Mouvement Diagonal (Diagonal Movement)

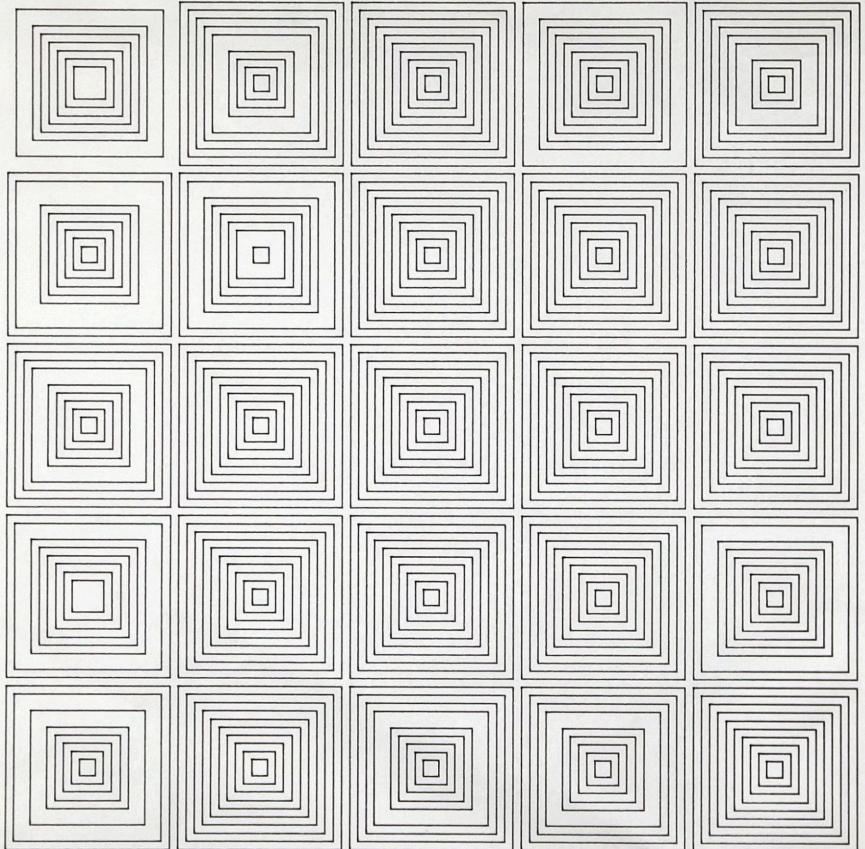
Vera Molnar
Segments

Vera Molnar
Prépa à Monet, Etude (Preparation for Monet, Study)

Vera Molnar
Structure à Partir de la Lettre N... 10 Ans Plus Tard (Structure I)

Vera Molnar
9 Carrés, Rouges (9 Squares, Red)

Vera Molnar
Segments



Case Study

Vera Molnar, Des Orders (1974) Ⓢ

Analyze the artwork using Computational Thinking

1. Decomposition
2. Pattern Recognition
3. Abstraction
4. Algorithm Design

Assignment

1.  goto ALAP website. Choose an artwork that includes Randomness and Repetition category.
2. Analyze the artwork. Explicitly declare Decomposition, Pattern Recognition, Abstraction and Algorithm Design phases. (20 pts)
3. The use of variables. (10 pts)
4. You must use random() function in your code. E.g. change the size of the eyes randomly... (20 pts)
5. The use of for loops (20 pts)
6. The use of comments in the code (10 pts)
7. Tidy up the code (10 pts)
8.  Submit the openprocessing link. (5 pts)
9.  Submit the sketch source code as zip file as well. (5 pts)
10.  Reading
11.  Watch the videos → random