

PV259

Generative Design Programming

Week 5

Custom shapes & curves

MUNI
FI

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Custom shapes

The commands

beginShape()

vertex(x1,y1)

vertex(x2,y2)

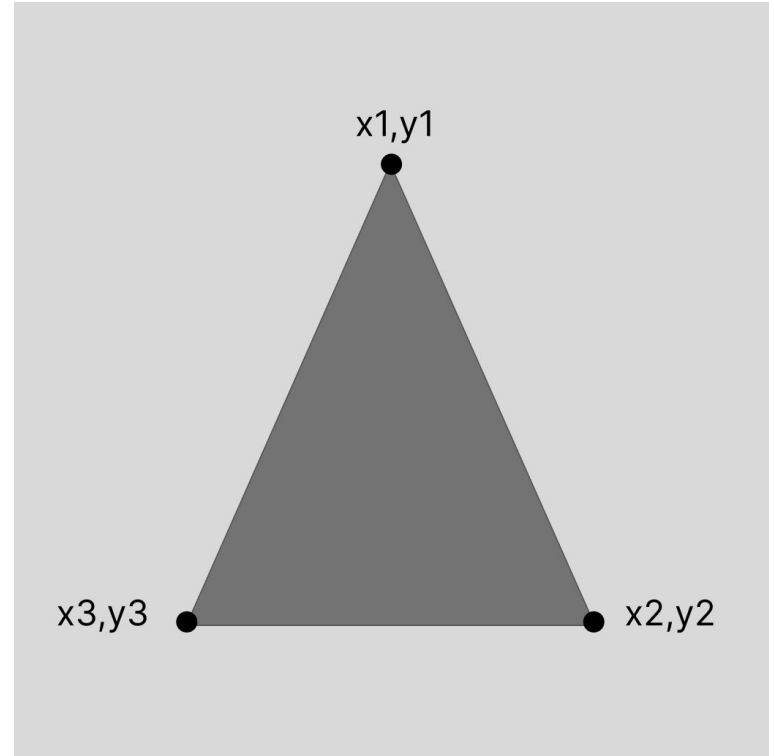
vertex(x3,y3)

vertex(x1,y1)

...

endShape()

// or **endShape(CLOSE)**



Example

->

Shape types

beginShape(TYPE)

- POINTS
- LINES (makes line between pairs of points, e.g. 1—2 3—4... it's dashed)
- TRIANGLES
- TRIANGLE_STRIP

... more in reference of beginShape

Curve

Creates vertex for curve of shape

(only possible inside beginShape()/endShape() **without** beginShape parameter)

beginShape()

curveVertex(x,y) // or curveVertex(x,y,z)

endShape()

You need at least 4 curveVertex() to draw curve between 2. and 3. point

- adding fifth point will draw curve also between 3. and 4. point ...

Example

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Contour

Create negative shape within shape. Only possible inside **beginShape()** / **endShape()** sequence.

beginShape()

```
// create shape in clockwise order
```

beginContour()

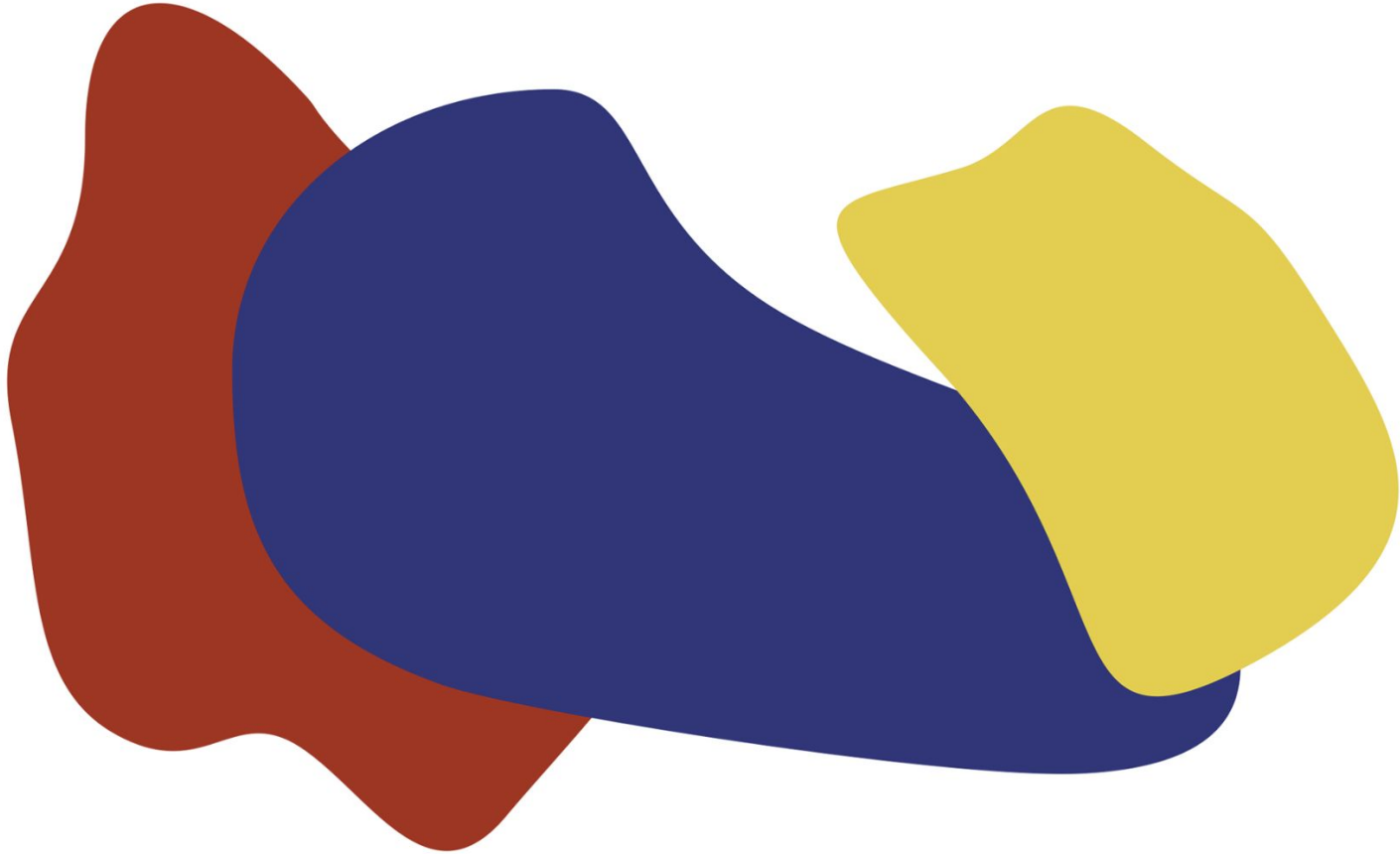
```
// inner shape in counter-clockwise order
```

endContour()

endShape()

Example

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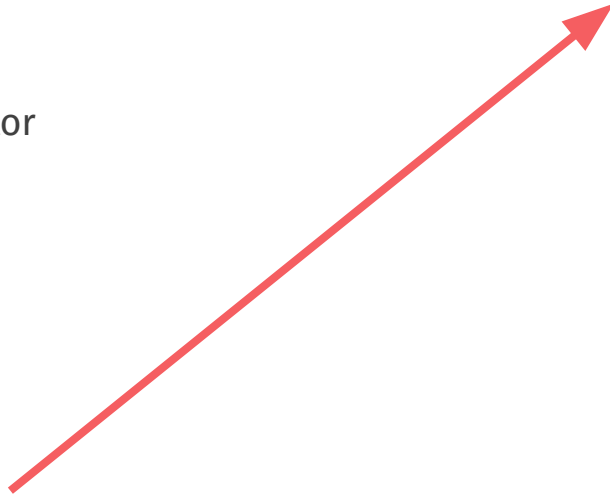
p5.Vector

```
const v = createVector(x, y, [z])  
  // v.x returns x coordinate  
  // v.y returns y
```

Many methods available

- **set()** to change x, y without creating new vector
- **add()** to add two vectors, or add scalar
- **array()** access as array instead of object
- **random2D()** create random vector

... [reference page with more methods](#)



Array

TODO

push

for of

length

collection of related data.

```
array : [  
  "some",  
  "text",  
  "for",  
  "example"  
]
```

Example

->

Blob maker

Create a shape using mouse clicking.

- ❑ create an array, which will store vertices (points) of the shape
- ❑ on click, use **createVector()** to save current position into the array as a p5.Vector
- ❑ draw curves using **beginShape()-endShape()** sequence from the points in the array

[Finished code](#)



OOP in JS

Object

A collection of related data.

```
let object = {  
  number : 100,  
  string : "Hello",  
  array : [  
    "some",  
    "text",  
    "for",  
    "example"  
  ]  
}
```

Example

->

Class

A collection of related data and functionality.

```
class Object {  
    constructor() {  
        this.number = 100;  
        this.string = "Hello";  
    }  
    addToNumber(){  
        this.number += 10;  
    }  
    addWorld(){  
        this.string += "world";  
    }  
}
```

Example ->

Example 2 ->

Blobs as classes

- ❑ turn blob from previous sketch to `BlobbityBlob` class (cannot name it `Blob`, it clashes with builtin JS class)

```
class BlobbityBlob {
  points = [];

  addPoint(x, y) {
    ...
  }

  draw() {
    ...
  }
}
```

Starting code

->

JS lambdas: forEach, filter, find

```
const arr = ['a', 'b', 'c'];
```

```
arr.forEach(element =>  
console.log(element));  
// "a"  
// "b"  
// "c"
```

```
arr.filter(e => e !== "b");  
// ["a", "c"]
```

example:

Remove unwanted elements from array.

Find object by its property:

```
const fruits = [  
  { name: "apples", quantity: 2 },  
  { name: "bananas", quantity: 0 },  
  { name: "cherries", quantity: 5 }  
];
```

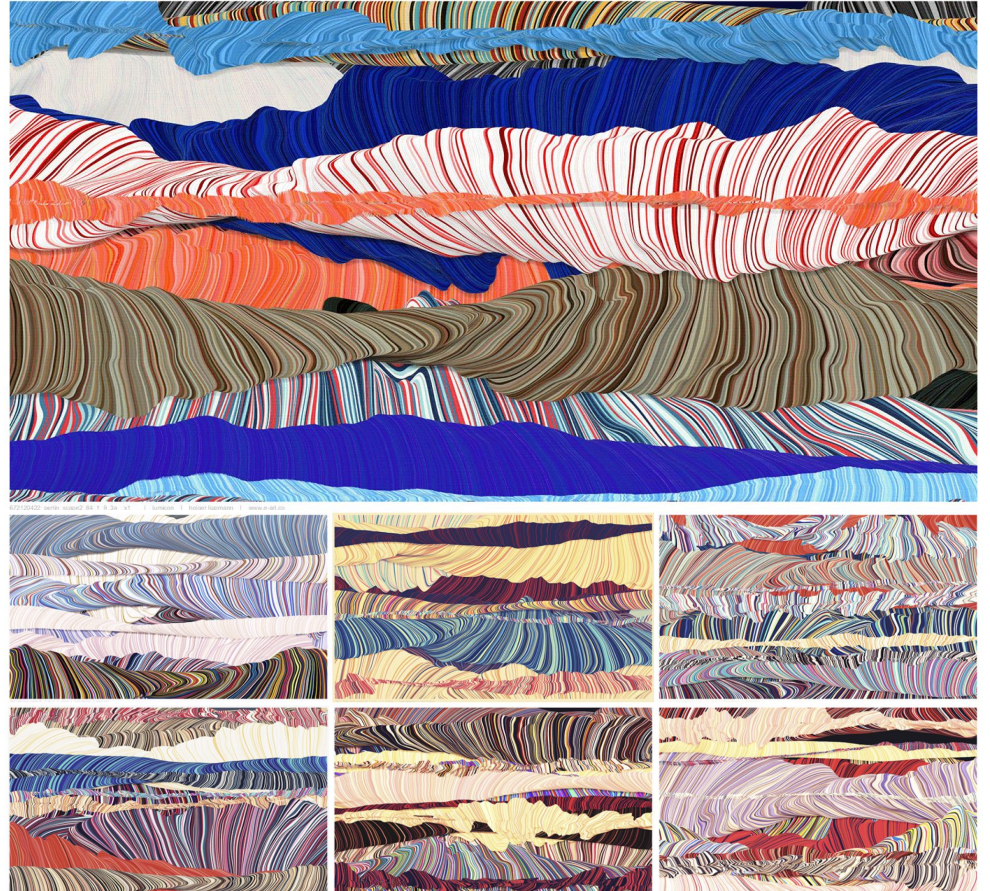
```
fruits.find(f => {  
  return f.name === "cherries"  
});  
// OR this one-liner  
fruits.find(f => f.name === "cherries");
```

→ IMAGE

perlinScape 2021

Holger Lippmann, 2021

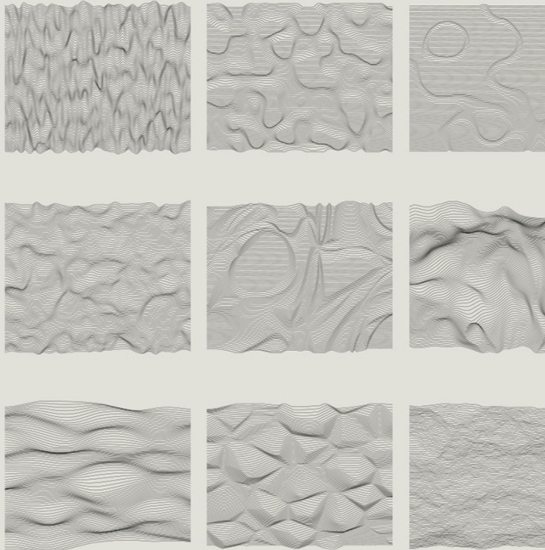
The series "perlinScape 2021" emerged from the initial linear noise structures, from sinuous and organically warping waves, an increasingly refined compositional structure, a pictorial motif, the apparent motif "landscape". a gently undulating landscape, which can be found in the German Erzgebirge area of my childhood as well as around my current place of residence in Brandenburg.

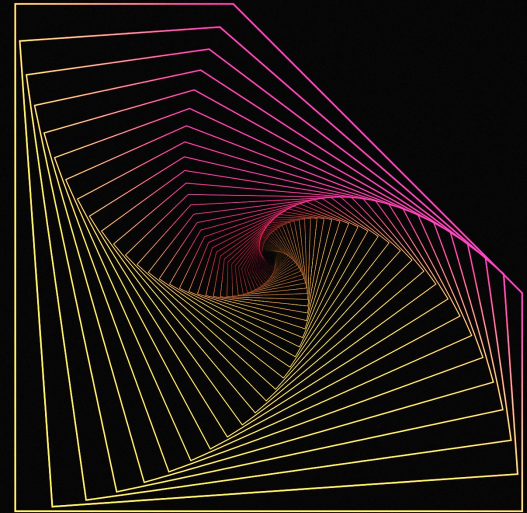
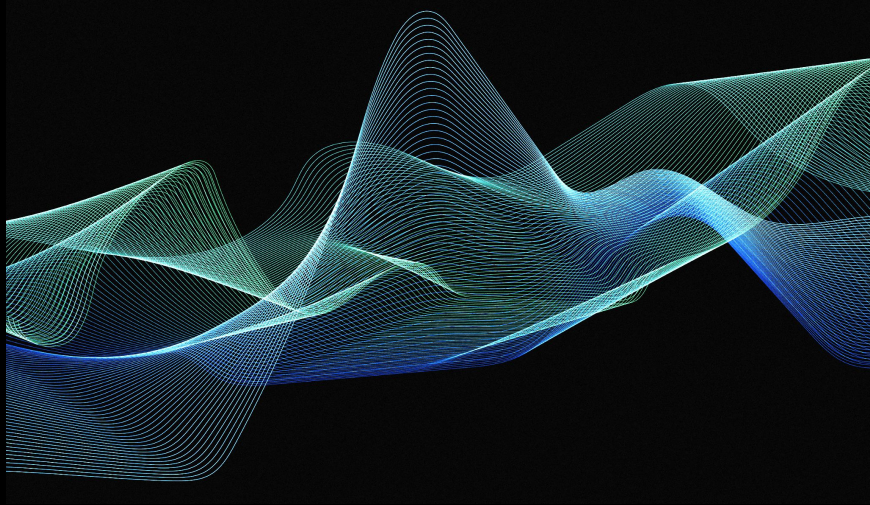


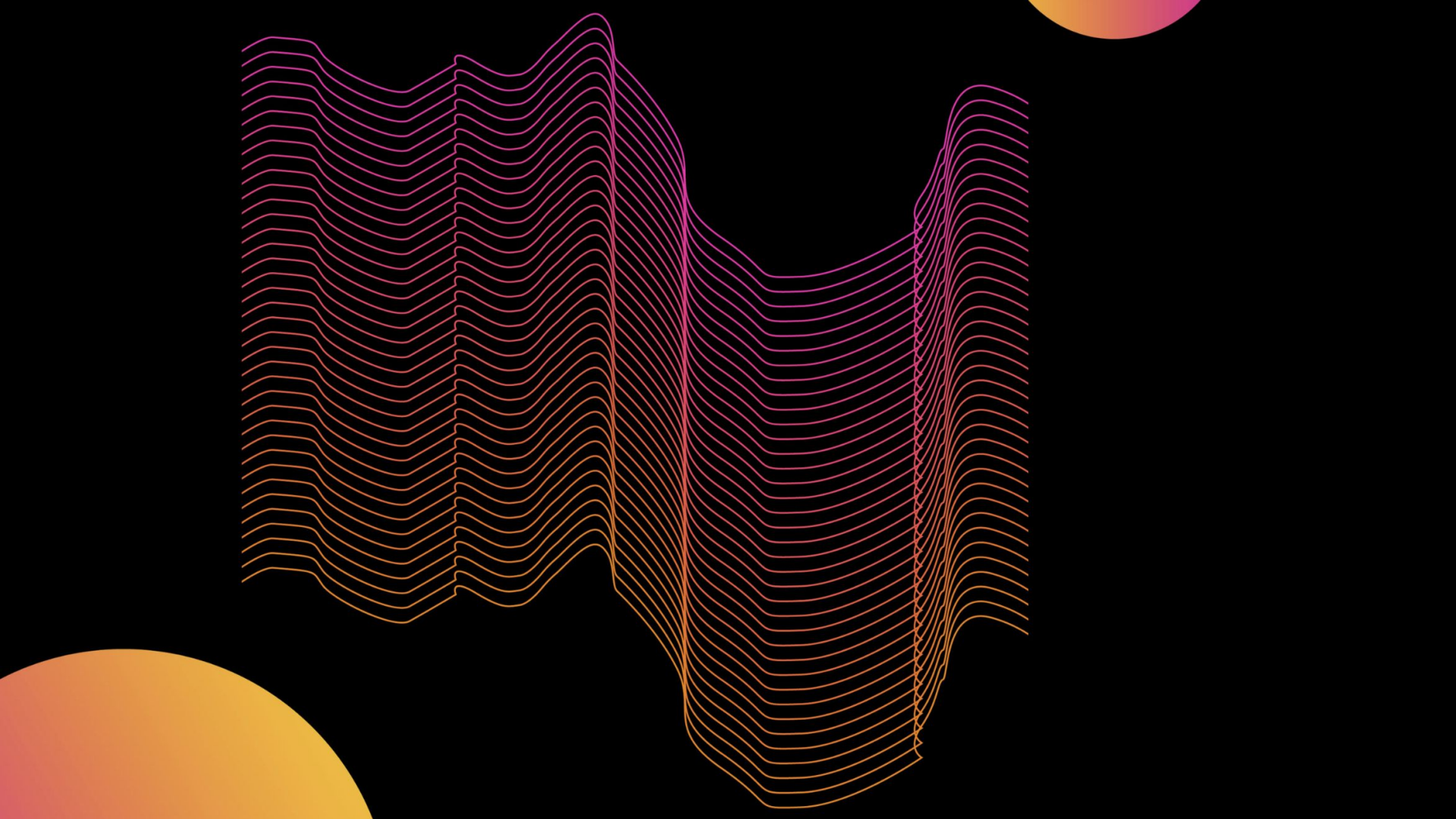
→ IMAGE

60 Abstract Waves

Artem Ottoson, 2022



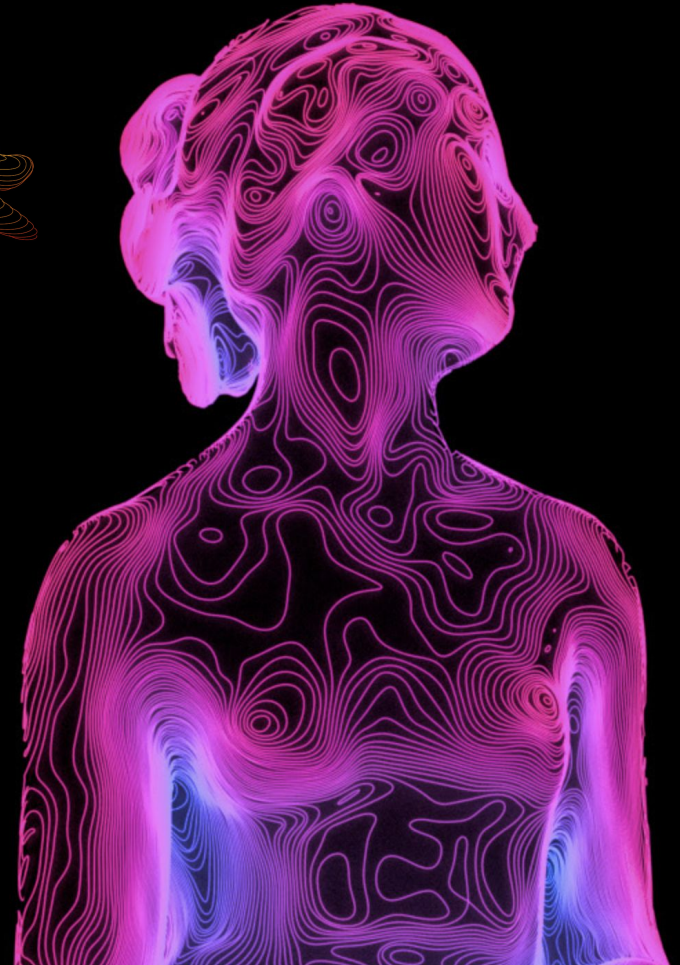
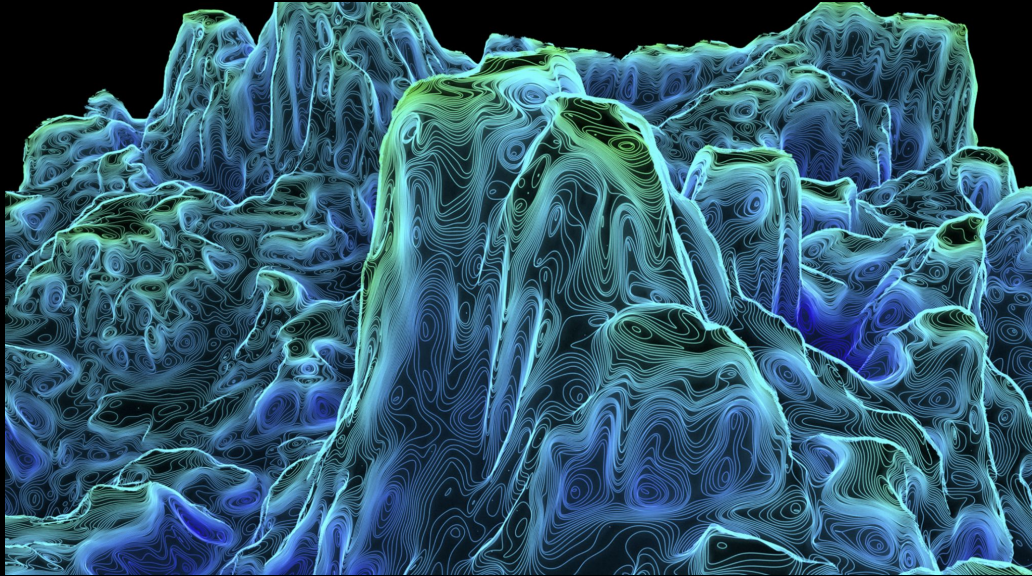
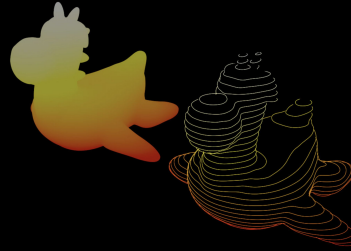




→ IMAGE

Occlusion Based Isolines Procedure

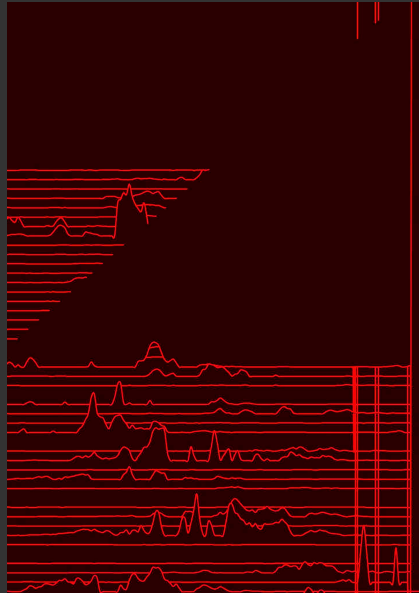
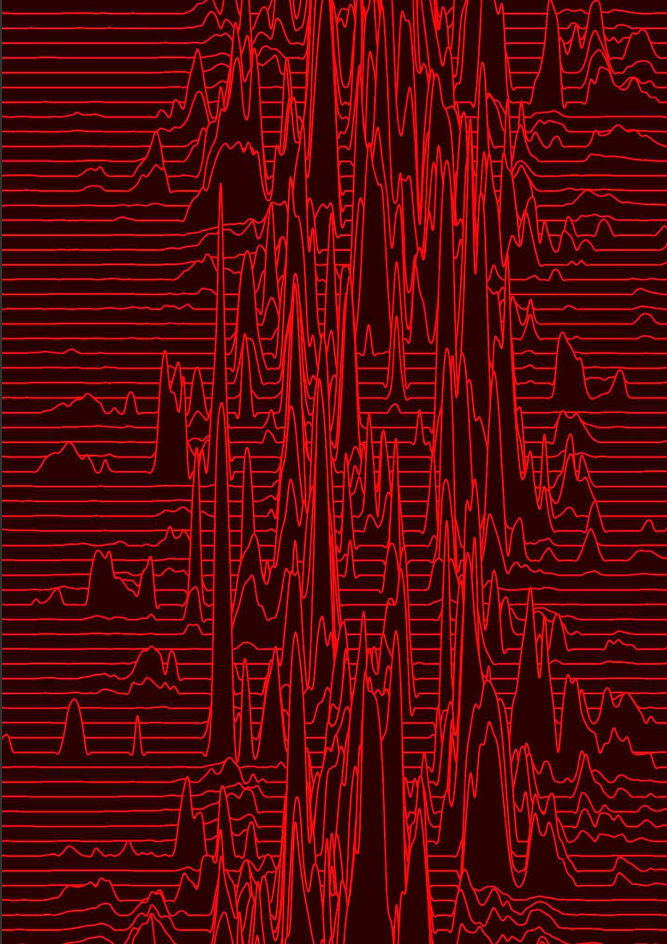
Pascal Beeckmans



→ IMAGE

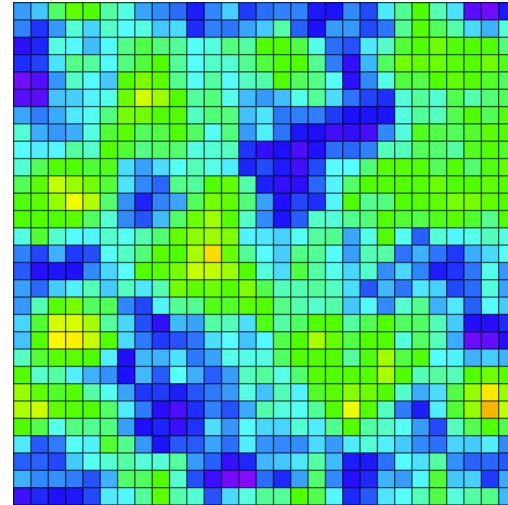
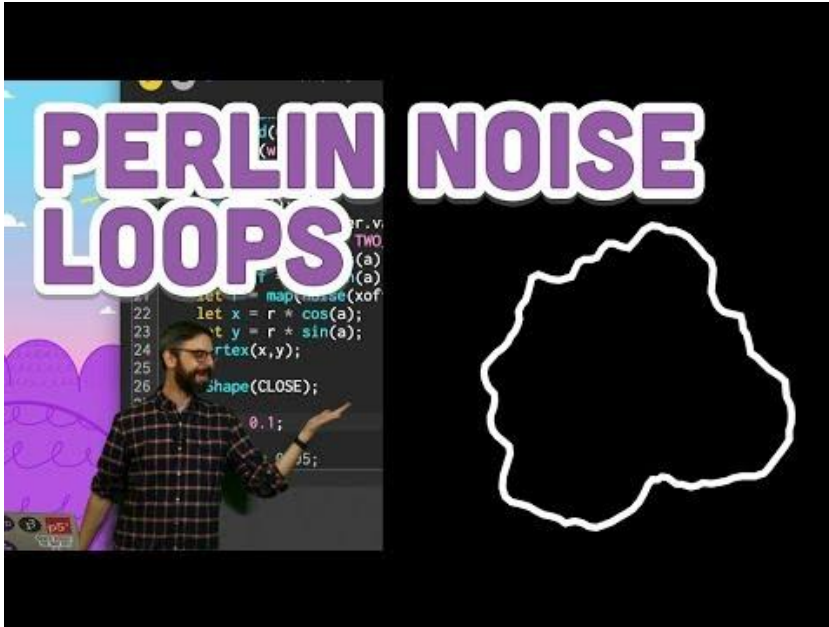
Joy Division album inspired

Marko Řeháček



Polar coordinates

If you travel through noise map in a circle, you end up in the same position.



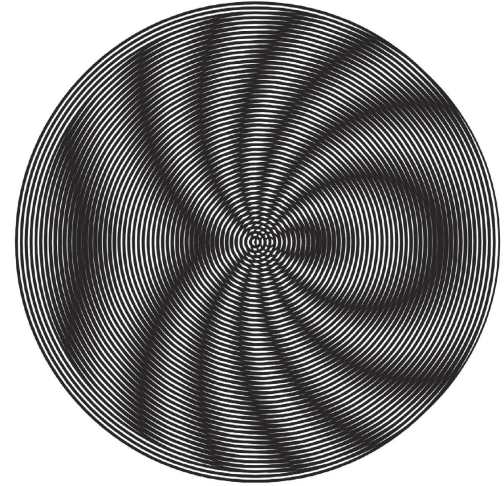
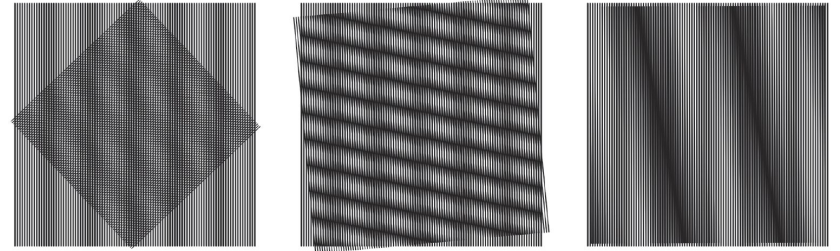
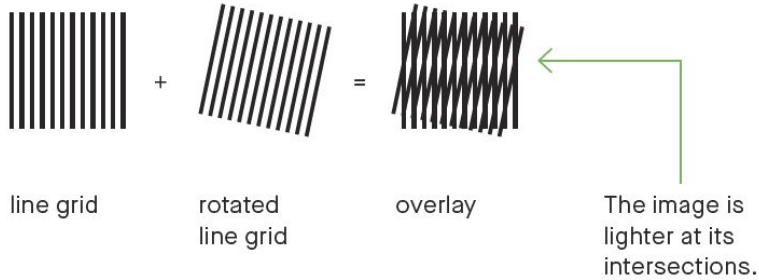
W03 lecture -> 2D noise

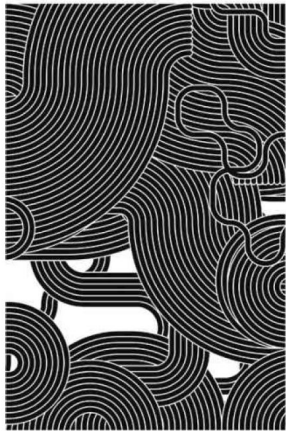
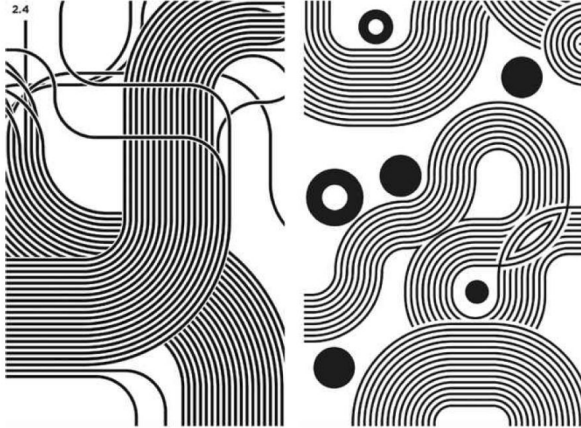
Example

->

Moiré

“Usually considered a mistake in printing technology, but desirable for us. By laying one graphic grid over another identical grid and moving it, you can generate unexpected optical illusions that you can change in real time.”





Puddle Builder by Andreas Gysin and Sidi Vanetti

2.5

The Puddle
Horn
Horn Hip-Hop

Friday
14 January 2013
20 Uhr

Spill &
Dancehall &
Zhi

Cancelled
Electronica
Live

John Player
Beats & soul
and more
DJ

P-tess
Hip-Hop and more
DJ

www.thepuddle.ch

2.5

The Puddle
Horn
Horn Hip-Hop

Dienstag
11 Juni 2013
21 Uhr

Olo to
Olostrasse 10
Münchenstein

Coco Bryce
Smith Stop, Skowas
Mpor, Fremontville, Me,
Live (DJ)

Marcelle
Style massacre
Another Nice Mess, Klangbad, Me,
DJ

In the mix
Kroyal, Jonté Fresco, P-tess
Bass Music
The Puddle, ZH
DJ

PL
LIT
ON

www.thepuddle.ch

→ DYNAMIC TYPE, WEB

Personal website

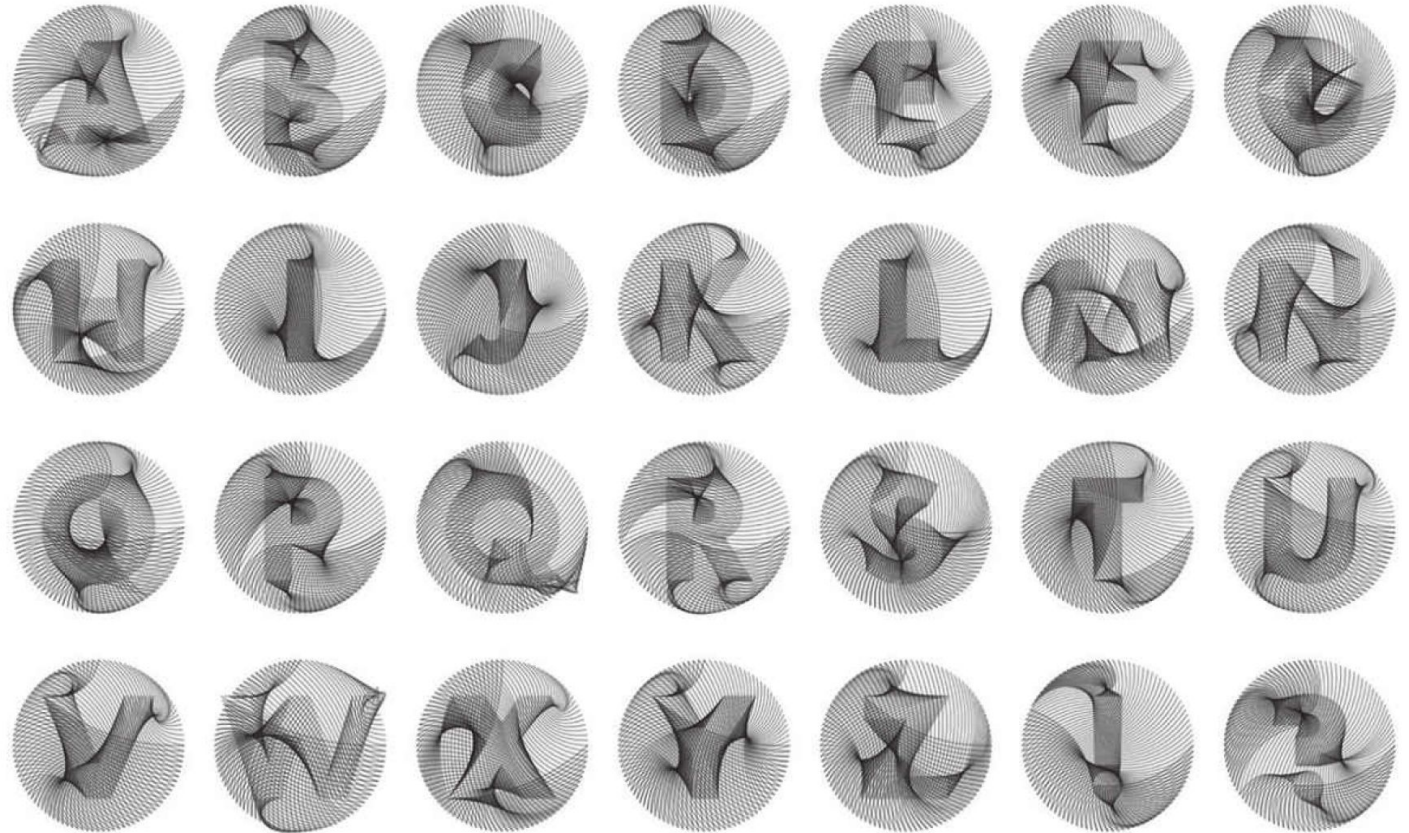
Marina Cardoso



→ TYPE

Code-Type

Kyuha Shim



→ TYPE

Caligraft

Ricard Marxer



Noisy curves

- ❑ use noise with curves
- ❑ generate 5 ideas from constraint generator: pick 1 or 2 and use them
- ❑ don't forget to pick good harmonic colors / maybe start with B&W

Creative constraints

<https://creative-constraints.surge.sh/#/en>

Sketches from all classes available at
https://editor.p5js.org/mrehacek/collections/Y7yY_s7PN