

Drawing with Ruby on Browser

Quipper Limited

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Content

- How to draw a picture on browser
- with Ruby 

The background features a dark blue field filled with numerous overlapping, jagged, low-poly shapes. These shapes are rendered in a variety of colors including bright green, magenta, blue, orange, and yellow, creating a complex, abstract pattern. The word "DEMO" is centered in the upper half of the image, rendered in a light blue, sans-serif font.

DEMO

How?

1. Opal
2. P5.js
3. Small magic 🧙

Opal

Ruby to JavaScript source-to-source compiler

<https://opalrb.com/>

Ruby

```
1 class User
2   attr_accessor :name
3
4   def initialize(name)
5     @name = name
6   end
7
8   def admin?
9     @name == 'Admin'
10  end
11 end
12
13 user = User.new('Bob')
14 puts user
15 puts user.admin?
```

To JavaScript 🤖

```
1  /* Generated by Opal 0.11.0 */
2  (function(Opal) {
3    var self = Opal.top, $nesting = [], nil = Opal.nil, $breaker = Op
4
5    Opal.add_stubs(['$attr_accessor', '$==', '$new', '$puts', '$admin
6
7    (function($base, $super, $parent_nesting) {
8      function $User(){};
9      var self = $User = $klass($base, $super, 'User', $User);
10
11      var def = self.$$proto, $nesting = [self].concat($parent_nestin
12
13      def.name = nil;
14
15      self.$attr_accessor("name");
16
17      Opal.defn(self, '$initialize', TMP_User_initialize_1 = function
18        var self = this;
19
20        return (self.name = name)
21      }, TMP_User_initialize_1.$$arity = 1);
22      return (Opal.defn(self, '$admin?', TMP_User_admin$q_2 = functio
23        var self = this;
```

P5.js

JavaScript implementation of Processing

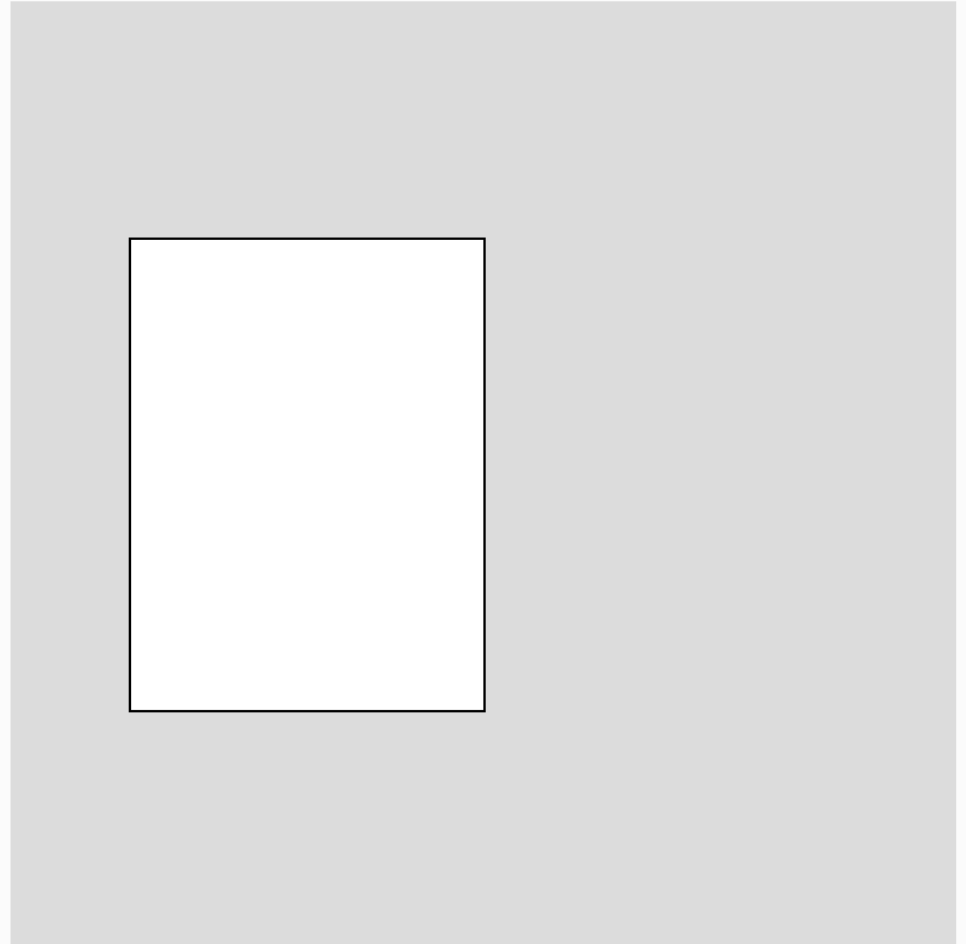
<https://p5js.org/>

JavaScript to a picture with canvas

> sketch.js •

```
1 function setup() {  
2   createCanvas(400, 400);  
3 }  
4  
5 function draw() {  
6   background(220);  
7   rect(50, 100, 150, 200);  
8 }
```

Preview



Small Magic

- P5.js defines its properties and functions in window
- Use %x{} to call window.someMethod from Ruby
- Use method_missing to handle all method calls

<http://tkitao.hatenablog.com/entry/2015/12/19/192523>

p5.rb x

```
1  module P5
2  def self.method_missing(name, *args)
3    %x{
4      obj = window[name];
5      if (typeof(obj) == 'function') {
6        return window[name].apply(window, args);
7      } else {
8        return window[name];
9      }
10   }
11 end
12
13 %x{
14   window.setup = function() { Opal.top.$setup(); };
15   window.draw = function() { Opal.top.$draw(); };
16 }
17 end
18
```

```
def setup
  P5.createCanvas(P5.windowWidth, P5.windowHeight)
  P5.frameRate(4)
end

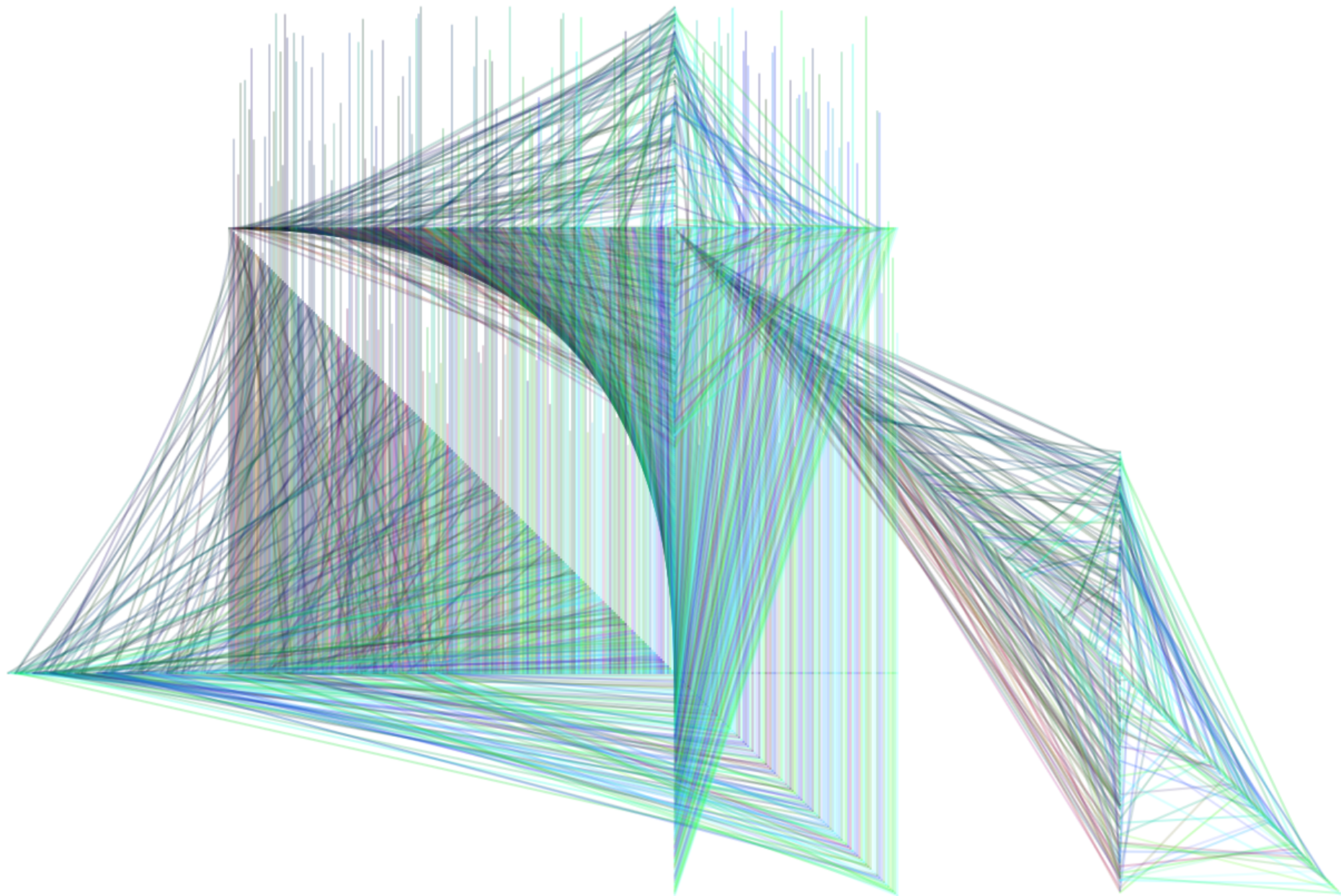
def draw
  P5.background(255)

  (100..400).each do |i|
    r = P5.random(200)
    P5.stroke(P5.color(P5.random(r), P5.random(i), P5.random(i), 60));

    P5.line(300, r, i, 100)
    P5.line(300, i, i, 100)

    P5.line(i, i, i, 300)
    P5.line(i, i, r, 300)
    P5.line(i, r, i, 300)

    P5.line(500, r + 200, i + 200, i)
  end
end
```

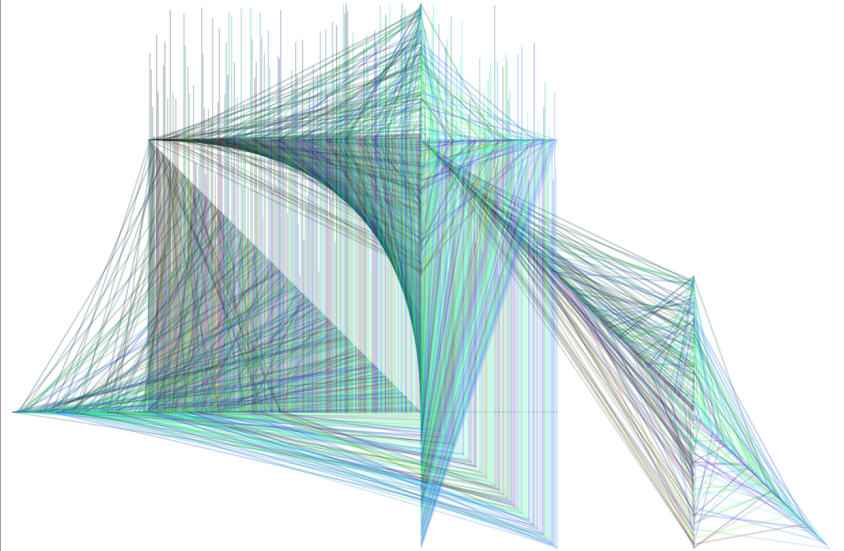


What is the very first step?

Try it on <https://codepen.io/ohbarye/pen/XYjGXp>

HTML

```
1 <script src="https://cdnjs.cloudflare.com/ajax/libs/p5.js/0.5.11/p5.min.js">
  </script>
2 <script src="http://cdn.opalrb.com/opal/0.9.4/opal.min.js"></script>
3 <script src="http://cdn.opalrb.com/opal/0.9.4/opal-parser.min.js"></script>
4 <script>Opal.load('opal-parser');</script>
5 <script type="text/ruby">
6   %x{console.log(window)}
7
8   module P5
9     def self.method_missing(name, *args)
10      %x{
11        obj = window[name];
12        if (typeof(obj) == 'function') {
13          return window[name].apply(window, args);
14        } else {
15          return window[name];
16        }
17      }
18    end
19
20    %x{
21      window.setup = function() { Opal.top.$setup(); };
22      window.draw = function() { Opal.top.$draw(); };
23    }
24  end
```



Code Reading

(Once time permits)

<https://github.com/ohbarye/ruby-processing-examples>

Who?



-
- @ohbarye <http://ohbarye.me/>
 - Web Developer / Engineering Manager
 - Working for Quipper

7/19 (Thu) 19:30-22:00

<https://techplay.jp/event/680406>

スタディサプリ

Product Meetup #1

