

使用 Processing 实现新媒体艺术 作品

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新媒体艺术

- <https://www.bilibili.com/video/av7420059>
- 2012 除夕夜北京地区短信数据的可视化作品
- Language : Processing
- Author: Tealeaf, Contra, AnYong Cui



What is Processing

A flexible software sketchbook and a **language** for learning how to code within the context of the **visual arts**.

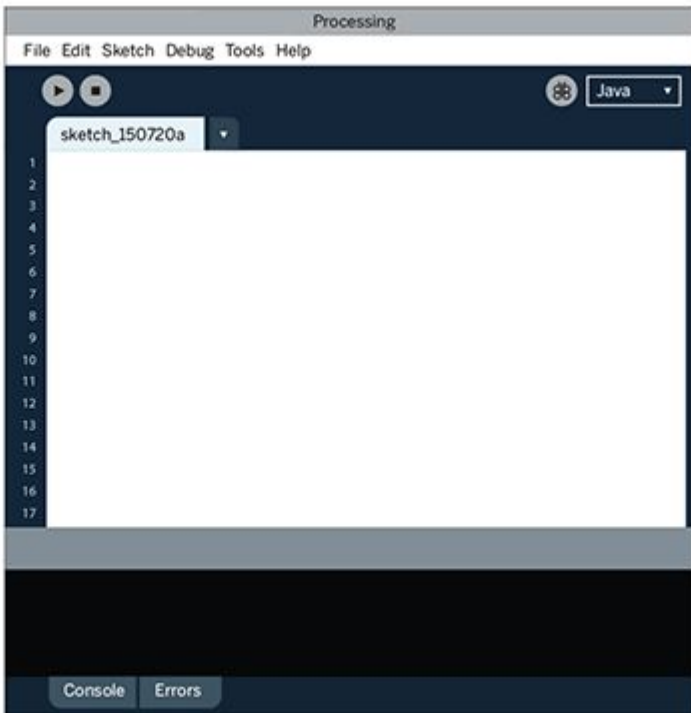


A Programmer's Perspective

- 输出是图形或者动画的编程语言
- 语法与 Java 类似，部分复用了 Java 的 compiler



Display Window



Menu
Toolbar
Tabs

Text Editor

Message Area

Console

What Could Processing Do?

- <https://www.openprocessing.org/sketch/121526>
- <https://www.openprocessing.org/sketch/393093>
- <https://www.openprocessing.org/sketch/64754>

Outline

- Installation
- HOWTO
 - 2D
 - Event System
 - 3D
 - Libraries
 - Multiple Languages
- Books and Online Resources



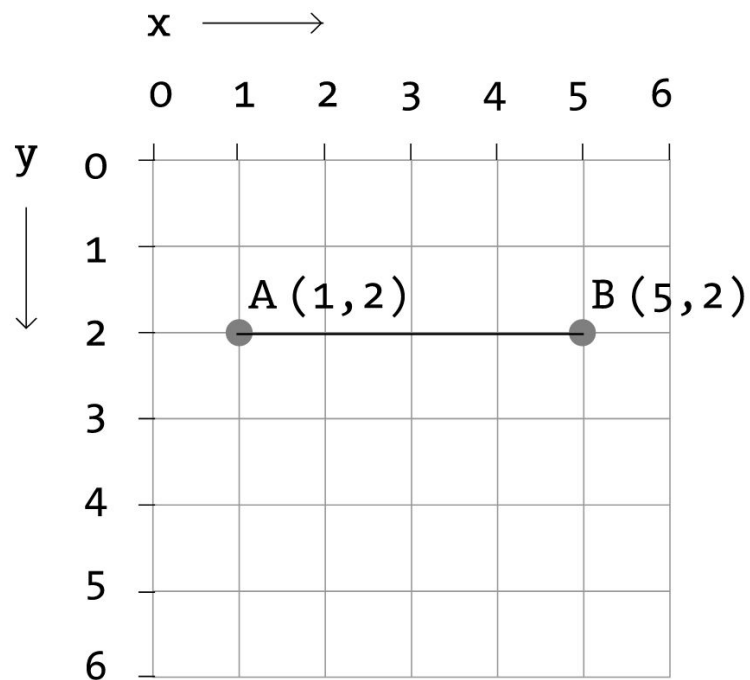
About gaocegege

- 东岳 MOOC & Open Source 组组长
- Processing.R 作者

Installation

- Available for Linux, Mac OS X, and Windows
- 3.3.6 (4 September 2017)
- <https://processing.org/download/>

2D



`line (x1 , y1 , x2 , y2) ;`

Point A Point B

Example: `line (1 , 2 , 5 , 2) ;`

Event

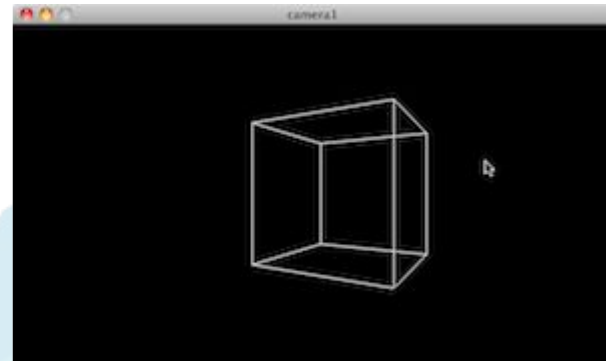
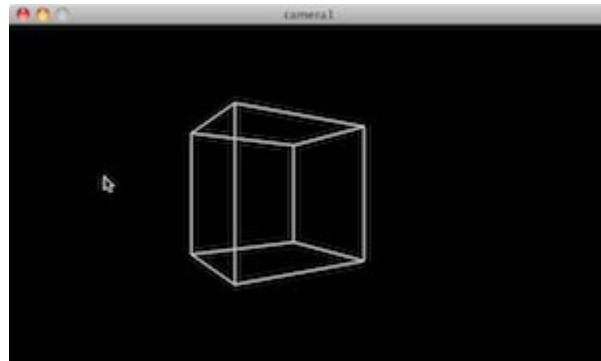
```
void setup() {  
  size(480, 120);  
}
```

```
void draw() {  
  if (mousePressed) {  
    fill(0);  
  } else {  
    fill(255);  
  }  
  ellipse(mouseX, mouseY, 80, 80);  
}
```

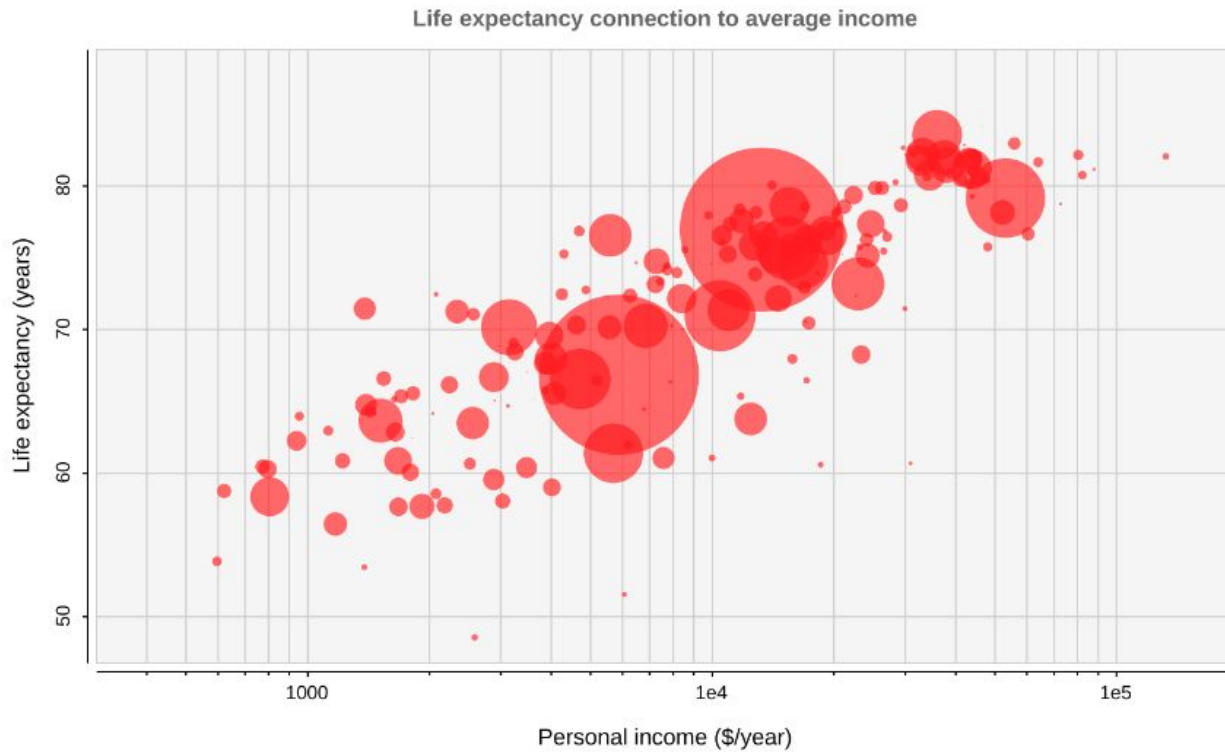


3D

```
void setup() {  
  size(640, 360, P3D);  
}  
  
void draw() {  
  background(0);  
  camera(mouseX, height/2,  
    (height/2) / tan(PI/6), width/2, height/2, 0, 0, 1, 0);  
  translate(width/2, height/2, -100);  
  stroke(255);  
  noFill();  
  box(200);  
}
```



Libraries



Multiple Languages

The screenshot shows the 'Modes' tab in the Processing IDE. At the top, there are tabs for 'Libraries', 'Modes', 'Tools', 'Examples', and 'Updates'. Below the tabs is a search bar labeled 'Filter'. The main area displays a list of modes with columns for 'Status', 'Name', and 'Author'. The 'R for Processing' mode is highlighted in light blue. At the bottom, a detailed view for 'R for Processing v1.0.5' is shown, including the author 'Processing,R Authors' and a 'Processing in R Language' description. Action buttons for 'Install', 'Downloading', 'Update', and 'Remove' are visible on the right side of the detailed view.

Status	Name	Author
	Android Mode Create projects with Processing for Andro...	The Processing Foundation
	CoffeeScript Mode Adds a CoffeeScript Mode based on P...	Florian Jenett
	JavaScript Mode Adds a JavaScript Mode based on Proc...	Florian Jenett
	p5.js Mode Adds a simple editor for p5.js code	Fathom Information Design
✓	Python Mode for Processing 3 Write Processing sketches ...	Jonathan Feinberg
☼	R for Processing Processing in R Language	Processing,R Authors
✓	REPL Mode Adds an REPL Console to view the output of ...	Joel Moniz

R for Processing v1.0.5
Processing,R Authors
Processing in R Language

↓ Install
Downloading
↻ Update
✕ Remove

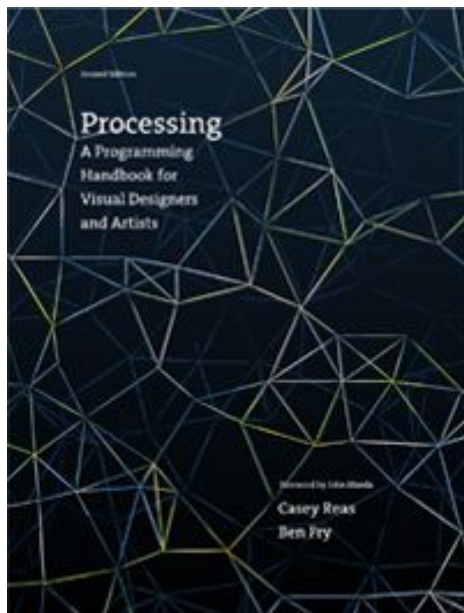
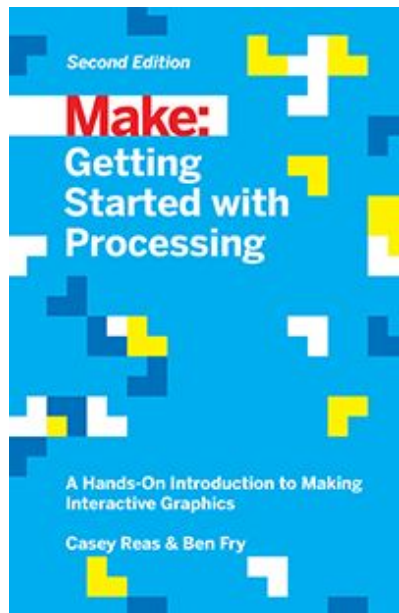
Example

```
settings <- function() {  
  size(500, 500, P3D)  
}  
  
setup <- function() {  
  colorMode(RGB, 1)  
  frameRate(24)  
}  
  
draw <- function() {  
  frames <- 24 * 3  
  t <- frameCount/frames  
  background(1)  
  perspective(0.5, 1, 0.01, 100)  
  camera(0, 0, 25 + sin(PI * 2 * t) * 3, 0, 0, 0, 0,  
1, 0)  
  rotateX(-0.5 - 0.05 * sin(PI * 4 * t))  
  rotateY(-0.5 - 0.05 * cos(PI * 2 * t))  
}
```

```
columns <- 8  
for (ix in 1:columns - 1) {  
  x <- ix - 0.5 * columns + 0.5  
  for (iy in 1:columns - 1) {  
    y <- iy - 0.5 * columns + 0.5  
    for (iz in 1:columns - 1) {  
      z <- iz - 0.5 * columns + 0.5  
      d <- sqrt(x * x + y * y + z * z)  
      s <- abs(sin(d - t * 4 * PI))  
      pushMatrix()  
      translate(x, z, y)  
      box(s)  
      popMatrix()  
    }  
  }  
}
```

Books and Online Resources

- <https://processing.org/books/>



Thanks

Q & A

