

Computação & Arte - Aula 2

Referencias:

- <https://p5js.org/tutorials/setting-up-your-environment/>
- <https://www.npmjs.com/package/p5>
- <https://marketplace.visualstudio.com/items?itemName=samplavigne.p5-vscode>
- <https://marketplace.visualstudio.com/items?itemName=ritwickdey.LiveServer>

Comp e Art (Slide 1)

GO

Na Aula Anterior (Slide 2)

Enrolar e improvisar

Na Aula de Hoje (Slide 3)

- Enrolar com rapidez
- <https://github.com/fllsouto/comp-art-aulas/tree/aula-2>

Sequencia de comandos (SLIDE 4)

```
$ mkdir comp-art-aula-2/
$ ls -la
total 12
drwxr-xr-x 3 fllsouto fllsouto 4096 Aug  4 03:03 .
drwxr-xr-x 4 fllsouto fllsouto 4096 Aug  4 03:03 ..
drwxr-xr-x 2 fllsouto fllsouto 4096 Aug  4 03:04 comp-art-aula-2

$ cd comp-art-aula-2/

$ npm init
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defaults.

See `npm help init` for definitive documentation on these fields
and exactly what they do.

Use `npm install <pkg>` afterwards to install a package and
save it as a dependency in the package.json file.
```

Press ^C at any time to quit.

package name: (comp-art-aula-2)

version: (1.0.0)

description: Fazendo arte com computação, javascript e p5.js

entry point: (index.js)

test command:

git repository:

keywords:

author: Fellipe Souto

license: (ISC)

About to write to /home/fllsouto/professorspace/alura/comp-art-aula-2/package.json:

```
{
  "name": "comp-art-aula-2",
  "version": "1.0.0",
  "description": "Fazendo arte com computação, javascript e p5.js",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "Fellipe Souto",
  "license": "ISC"
}
```

Is this OK? (yes)

\$ ls -la

total 12

```
drwxr-xr-x 2 fllsouto fllsouto 4096 Aug  4 03:04 .
drwxr-xr-x 3 fllsouto fllsouto 4096 Aug  4 03:03 ..
-rw-r--r-- 1 fllsouto fllsouto 273 Aug  4 03:04 package.json
```

cat package.json

```
{
  "name": "comp-art-aula-2",
  "version": "1.0.0",
  "description": "Fazendo arte com computação, javascript e p5.js",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "Fellipe Souto",
  "license": "ISC"
}
```

npm install -S p5

added 1 package, and audited 2 packages in 2s

found 0 vulnerabilities

\$ cat package.json

```
{
  "name": "comp-art-aula-2",
  "version": "1.0.0",
  "description": "Fazendo arte com computação, javascript e p5.js",
  "main": "index.js",
  "scripts": {
    "test": "echo \"Error: no test specified\" && exit 1"
  },
  "author": "Fellipe Souto",
  "license": "ISC",
  "dependencies": {
    "p5": "^1.10.0"
  }
}
```

\$ code .

Comandos no VSCODE (SLIDE 5)

1. Instalar a dependência p5.vscode
2. CTRL+SHIFT+P + "Create p5.js Project"
3. Choose local file "comp-art-aula-2/"
4. Wait to create every files
5. CTRL + SHIFT + P + "Live Server: Open with Live Server"
6. Open localhost:5500
7. Close and Stop
8. Run again
9. Open inside simple broswer (vscode)
10. Hello World
 1. change color background
 2. show auto-update

Criando uma nova tela para desenho: O Canvas A4 (Slide 6)

https://pt.wikipedia.org/wiki/Tamanho_de_papel

https://pt.wikipedia.org/wiki/ISO_216

****A4**** é um tamanho de papel, definido pela norma ISO 216, com as dimensões de 210 mm de largura e 297 mm de altura. A área de uma página A4 é de 1/16 m².

A4 é o [tamanho de papel](https://pt.wikipedia.org/wiki/Tamanho_de_papel "Tamanho de papel") mais utilizado em casas e escritórios em todo o mundo (exceção nos [EUA](https://pt.wikipedia.org/wiki/Estados_Unidos "Estados Unidos"), no [Canadá]

(<https://pt.wikipedia.org/wiki/Canad%C3%A1> "Canadá") e em alguns países sul-americanos, em que são mais comuns outras normas de [tamanho de papel] (https://pt.wikipedia.org/wiki/Tamanho_de_papel "Tamanho de papel")).

Numa resolução de digitalização ou de impressão de 300 [pontos por polegada] (https://pt.wikipedia.org/wiki/Pontos_por_polegada "Pontos por polegada"), uma página de [papel] (<https://pt.wikipedia.org/wiki/Papel> "Papel") de tamanho A4 corresponde a 2480 pontos de largura e 3508 pontos de altura.

210 mm de largura

297 mm de altura

escalar um aumento de 50%

```
function setup() {  
  s = 0.5  
  largura = 297  
  altura = 210  
  createCanvas(largura*(1 + s), altura*(1 + s));  
}  
  
function draw() {  
  background("blue");  
}
```

210 pixels de largura

297 pixels de altura

210 x 297 = 62.370 pixels no total

62.370 / 8 = 7796,25 bits pra representar

8 x 1024 = 8192 bits = 1024 bytes

2 ^ 13 = 8192 bits

8 x 1024 linhas

16 x 512

32 x 256

64 x 128

212 x 40 = 8480 < 8192 x 8 = 65536

62.370 < 65.536

Desenho Simples (Slide 7)

A

```
draw() {  
  background("gray")
```

```
}
```

B

```
function setup() {  
  s = 0.5  
  largura = 297  
  altura = 210  
  createCanvas(largura*(1 + s), altura*(1 + s));  
  
}  
  
function draw() {  
  background("gray");  
  strokeWeight(10); // Set the thickness of the point  
  point(200, 200); // Draw a point at coordinates (200, 200)  
}
```

C - Centralizando o ponto

```
function draw() {  
  background("gray");  
  strokeWeight(10); // Set the thickness of the point  
  x = 150 * (1 + s)  
  y = 105 * (1 + s)  
  point(x, y); // Draw a point at coordinates (200, 200)  
  
}
```

D - Creating a circle

```
function draw() {  
  fill(255, 0, 0); // Set the fill color to red (RGB: 255, 0, 0)  
  noStroke();      // Disable the outline (stroke) of the circle  
  ellipse(200, 200, 50, 50); // Draw a circle at (200, 200) with a width and height  
of 50 pixels  
}
```

E - Create a triangle

```
function draw() {  
  fill(0, 255, 0); // Set the fill color to green  
  noStroke();      // Disable the outline (stroke) of the triangle
```

```
triangle(150, 100, 250, 100, 200, 50); // Draw a triangle with vertices at (150,
100), (250, 100), and (200, 50)
}
```

F - create a retangle

```
function setup() {
  s = 0.5
  largura = 297
  altura = 210
  createCanvas(largura*(1 + s), altura*(1 + s));

}

function draw() {
  noLoop();
  background("green")
  fill("blue")
  rect(30, 20, 55, 40);
  fill("red")
  rect(160, 140, 220, 160);
}
```

Bandeira do Japão

```
function setup() {

  s = 0.5
  largura = 297
  altura = 210
  createCanvas(largura*(1 + s), altura*(1 + s));
  background(255, 255, 255);
  noLoop()
}

function draw() {

  fill(255, 0, 0);
  circle(largura*(1 + s)/2, altura*(1 + s)/2, 180)
  noFill();
  strokeWeight(3);
  rect(0, 0, width, height);

}
```

Bandeira de MG

```
function setup() {  
  
  s = 0.5  
  largura = 297  
  altura = 210  
  createCanvas(largura*(1 + s), altura*(1 + s));  
  background(255, 255, 255);  
  noLoop()  
}  
  
function draw() {  
  
  x1 = largura*(1 + s)/2  
  y1 = 75  
  x2 = largura*(1 + s)/3  
  y2 = altura*(1 + s)/2 + 50  
  x3 = x2 + 150  
  y3 = y2  
  fill(255, 0, 0);  
  
  triangle(x1, y1, x2, y2, x3, y3); // Draw a triangle  
  
  noFill();  
  strokeWeight(3);  
  rect(0, 0, width, height);  
  
}
```

Bandeira da Irlanda

```
function setup() {  
  
  s = 0.5  
  largura = 297  
  altura = 210  
  createCanvas(largura*(1 + s), altura*(1 + s));  
  background(255, 255, 255);  
  noLoop()  
}  
  
function draw() {  
  
  fill(255, 0, 0);  
  circle(largura*(1 + s)/2, altura*(1 + s)/2, 180)
```

```
noFill();
strokeWeight(3);
rect(0, 0, width, height);

}
```

Poço de ideias

Poço de ideias

– [https://translate.google.com.br/?](https://translate.google.com.br/?sl=pt&tl=en&text=dobradi%C3%A7a%20antigas%20de%20metal&op=translate)

[sl=pt&tl=en&text=dobradi%C3%A7a%20antigas%20de%20metal&op=translate](https://translate.google.com.br/?sl=pt&tl=en&text=dobradi%C3%A7a%20antigas%20de%20metal&op=translate)

– <https://www.npmjs.com/package/p5>

– <https://p5js.org/tutorials/setting-up-your-environment/>

– <https://marketplace.visualstudio.com/items?itemName=samplavigne.p5-vscode>

– <https://hello.p5js.org/>

– <https://developer.mozilla.org/en-US/docs/Web/JavaScript>

– <https://marketplace.visualstudio.com/items?itemName=ritwickdey.LiveServer>

– [https://www.google.com/search?](https://www.google.com/search?gs_ssp=eJzj4tDP1TcwzKvMMWD04kpOLFJITCvKTE4EAEltBtM&q=car+africa&oq=car+AFRICA&gs_lcrp=EgZjaHJvbWUqBwgAEC4YgAQyBwgAEC4YgAQyDAGBEEUYORjjAhiABDIICAIQABgWGB4yCAgDEAAYFhgeMggIBBAAGBYHjIKCAUQABgKGBYYHjIICAYQABgWGB4yCAgHEAAYFhgeMggICBAAGBYHjIICAKQABgWGB7SAQg0NzQ0ajBqN6gCALACAA&sourceid=chrome&ie=UTF-8)

[gs_ssp=eJzj4tDP1TcwzKvMMWD04kpOLFJITCvKTE4EAEltBtM&q=car+africa&oq=car+AFRICA&gs_lcrp=EgZjaHJvbWUqBwgAEC4YgAQyBwgAEC4YgAQyDAGBEEUYORjjAhiABDIICAIQABgWGB4yCAgDEAAYFhgeMggIBBAAGBYHjIKCAUQABgKGBYYHjIICAYQABgWGB4yCAgHEAAYFhgeMggICBAAGBYHjIICAKQABgWGB7SAQg0NzQ0ajBqN6gCALACAA&sourceid=chrome&ie=UTF-8](https://www.google.com/search?gs_ssp=eJzj4tDP1TcwzKvMMWD04kpOLFJITCvKTE4EAEltBtM&q=car+africa&oq=car+AFRICA&gs_lcrp=EgZjaHJvbWUqBwgAEC4YgAQyBwgAEC4YgAQyDAGBEEUYORjjAhiABDIICAIQABgWGB4yCAgDEAAYFhgeMggIBBAAGBYHjIKCAUQABgKGBYYHjIICAYQABgWGB4yCAgHEAAYFhgeMggICBAAGBYHjIICAKQABgWGB7SAQg0NzQ0ajBqN6gCALACAA&sourceid=chrome&ie=UTF-8)

– https://pt.wikipedia.org/wiki/Rep%C3%BAblica_Centro-Africana

– [https://www.google.com/search?](https://www.google.com/search?sca_esv=098f310337d61f75&sxsrf=ADLYWIIJjeYoFvn8mVIFjBNBY69YhSEbXAA:1722825236371&q=Uruguai&udm=2&fbs=AEQNm0AuaLfhdrtx2b90DfK0pnmi046uB92frSWoVskpBryHTlk_BnclDEVJ373ohNdpcnUA2Q9glauq2hv-jmZkIjtHSldP9METoeXf7m00-M5nFgEVuEUlrdepD3tP42r7bevlWfixl2iNowTc2MNht9LzByuLTCwuDS22ptEIOXYvCZ8S33NeNsXQLtTlRII1RfQpBqQmXaPYExGxnj5tZPdc9mSs2Q&sa=X&ved=2ahUKEwjtiOWR6NyHAXW0H7kGHbhVMUoQtKgLegQIDBAB&biw=1280&bih=551&dpr=1.5)

[sca_esv=098f310337d61f75&sxsrf=ADLYWIIJjeYoFvn8mVIFjBNBY69YhSEbXAA:1722825236371&q=Uruguai&udm=2&fbs=AEQNm0AuaLfhdrtx2b90DfK0pnmi046uB92frSWoVskpBryHTlk_BnclDEVJ373ohNdpcnUA2Q9glauq2hv-jmZkIjtHSldP9METoeXf7m00-](https://www.google.com/search?sca_esv=098f310337d61f75&sxsrf=ADLYWIIJjeYoFvn8mVIFjBNBY69YhSEbXAA:1722825236371&q=Uruguai&udm=2&fbs=AEQNm0AuaLfhdrtx2b90DfK0pnmi046uB92frSWoVskpBryHTlk_BnclDEVJ373ohNdpcnUA2Q9glauq2hv-jmZkIjtHSldP9METoeXf7m00-M5nFgEVuEUlrdepD3tP42r7bevlWfixl2iNowTc2MNht9LzByuLTCwuDS22ptEIOXYvCZ8S33NeNsXQLtTlRII1RfQpBqQmXaPYExGxnj5tZPdc9mSs2Q&sa=X&ved=2ahUKEwjtiOWR6NyHAXW0H7kGHbhVMUoQtKgLegQIDBAB&biw=1280&bih=551&dpr=1.5)

[M5nFgEVuEUlrdepD3tP42r7bevlWfixl2iNowTc2MNht9LzByuLTCwuDS22ptEIOXYvCZ8S33NeNsXQLtTlRII1RfQpBqQmXaPYExGxnj5tZPdc9mSs2Q&sa=X&ved=2ahUKEwjtiOWR6NyHAXW0H7kGHbhVMUoQtKgLegQIDBAB&biw=1280&bih=551&dpr=1.5](https://www.google.com/search?sca_esv=098f310337d61f75&sxsrf=ADLYWIIJjeYoFvn8mVIFjBNBY69YhSEbXAA:1722825236371&q=Uruguai&udm=2&fbs=AEQNm0AuaLfhdrtx2b90DfK0pnmi046uB92frSWoVskpBryHTlk_BnclDEVJ373ohNdpcnUA2Q9glauq2hv-jmZkIjtHSldP9METoeXf7m00-M5nFgEVuEUlrdepD3tP42r7bevlWfixl2iNowTc2MNht9LzByuLTCwuDS22ptEIOXYvCZ8S33NeNsXQLtTlRII1RfQpBqQmXaPYExGxnj5tZPdc9mSs2Q&sa=X&ved=2ahUKEwjtiOWR6NyHAXW0H7kGHbhVMUoQtKgLegQIDBAB&biw=1280&bih=551&dpr=1.5)

– https://pt.wikipedia.org/wiki/Ret%C3%A2ngulo_de_ouro

– https://en.wikipedia.org/wiki/Golden_ratio

– https://pt.wikipedia.org/wiki/Propor%C3%A7%C3%A3o_%C3%A1urea

– https://pt.wikipedia.org/wiki/Bandeira_da_Ch%C3%A9quia