

expand your toolbox



Introduction
to creative
coding



Session 3

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- loops
- variables
- image
- text

loops

```
for(let i = 0; i < 10; i++) {  
  
    // do stuff 10 times  
  
}
```

loops

```
for(let i = 0; i < 10; i++) {
```

```
// do stuff 10 times
```

```
}
```

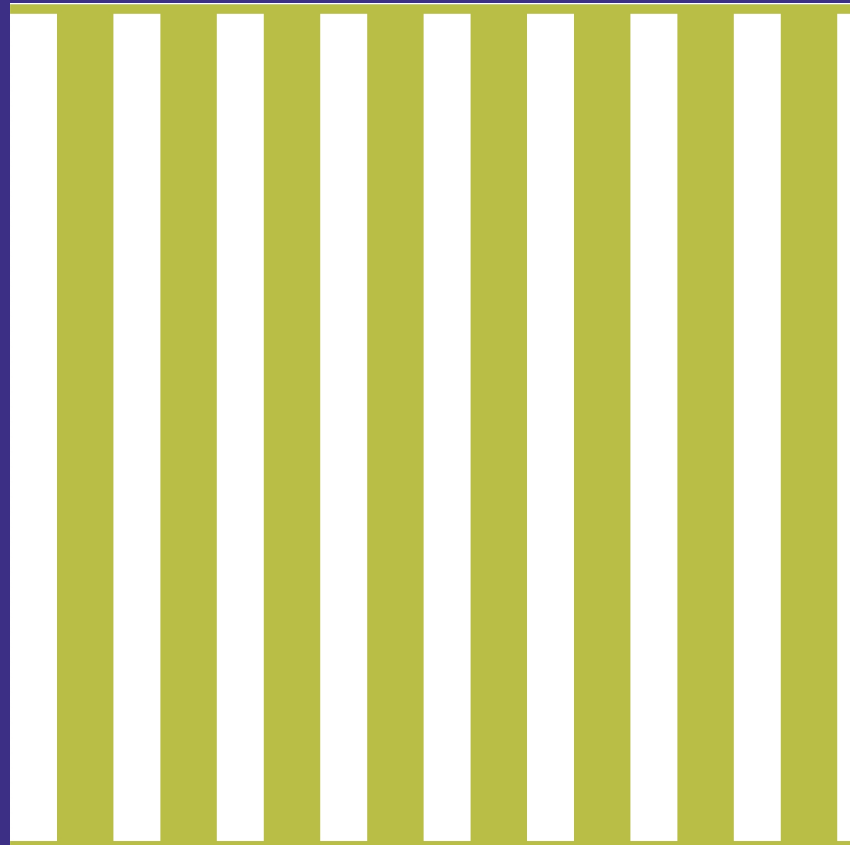
start counting from 0

10 loops maximum

increase counter

example: 10 rects

- draw 10 rects
- use the counter *i* to move each rect more to the right
i * 110



```
let accent = "#B8BE24"; // nice green color

function setup() {
  createCanvas(900, 900);
}

function draw() {

  background(accent);
  fill("white");
  noStroke();

  // loop
  for (let i = 0; i < 10; i++) {
    rect(i * 110, 10, 50, 880);
  }
}
```

example: 10 rects

rect 1

i is 0, so our
x position is
 $0 * 110 = 0$

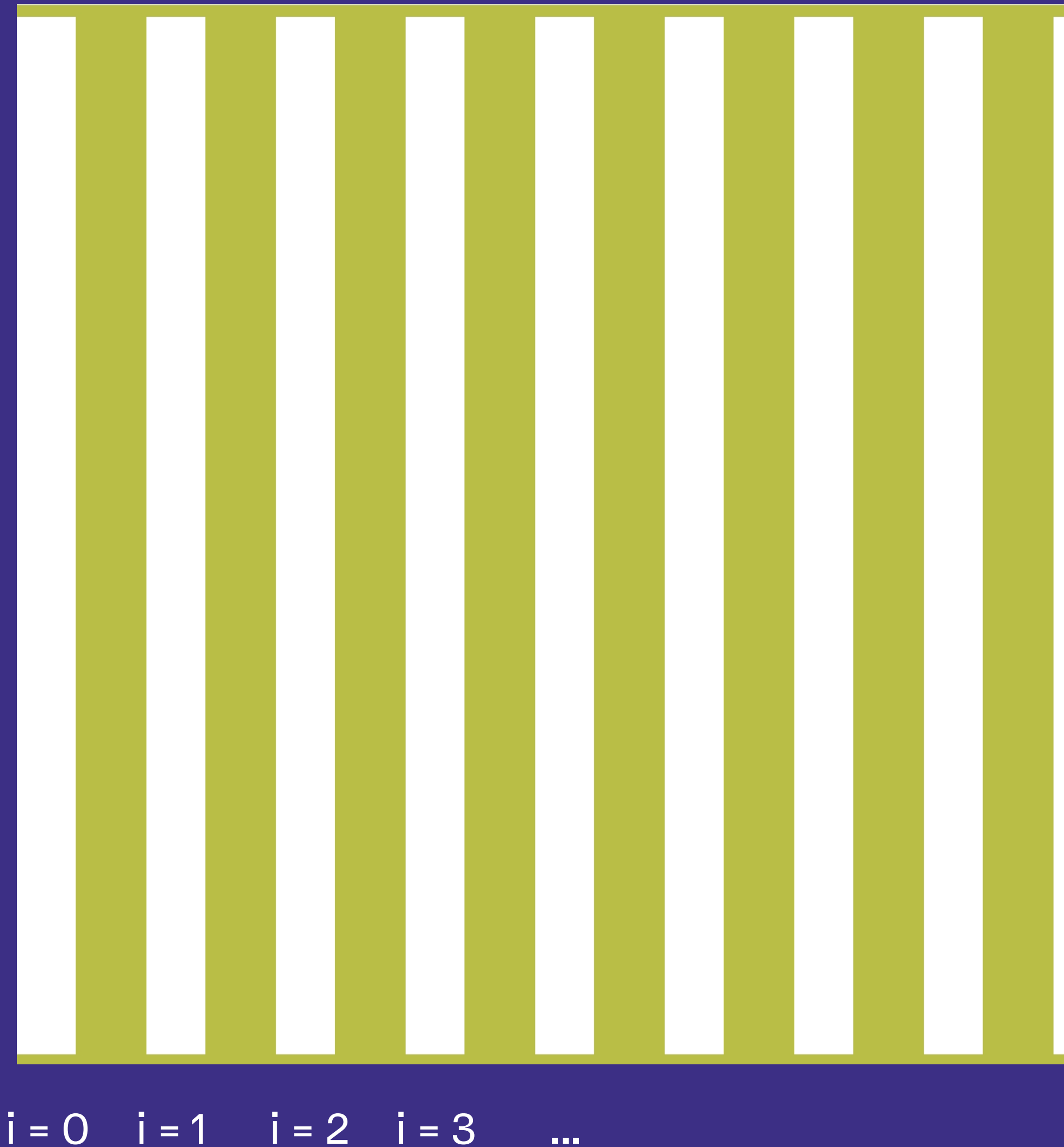
rect 2

i is 1, so our
x position is
 $1 * 110 = 110$

rect 3

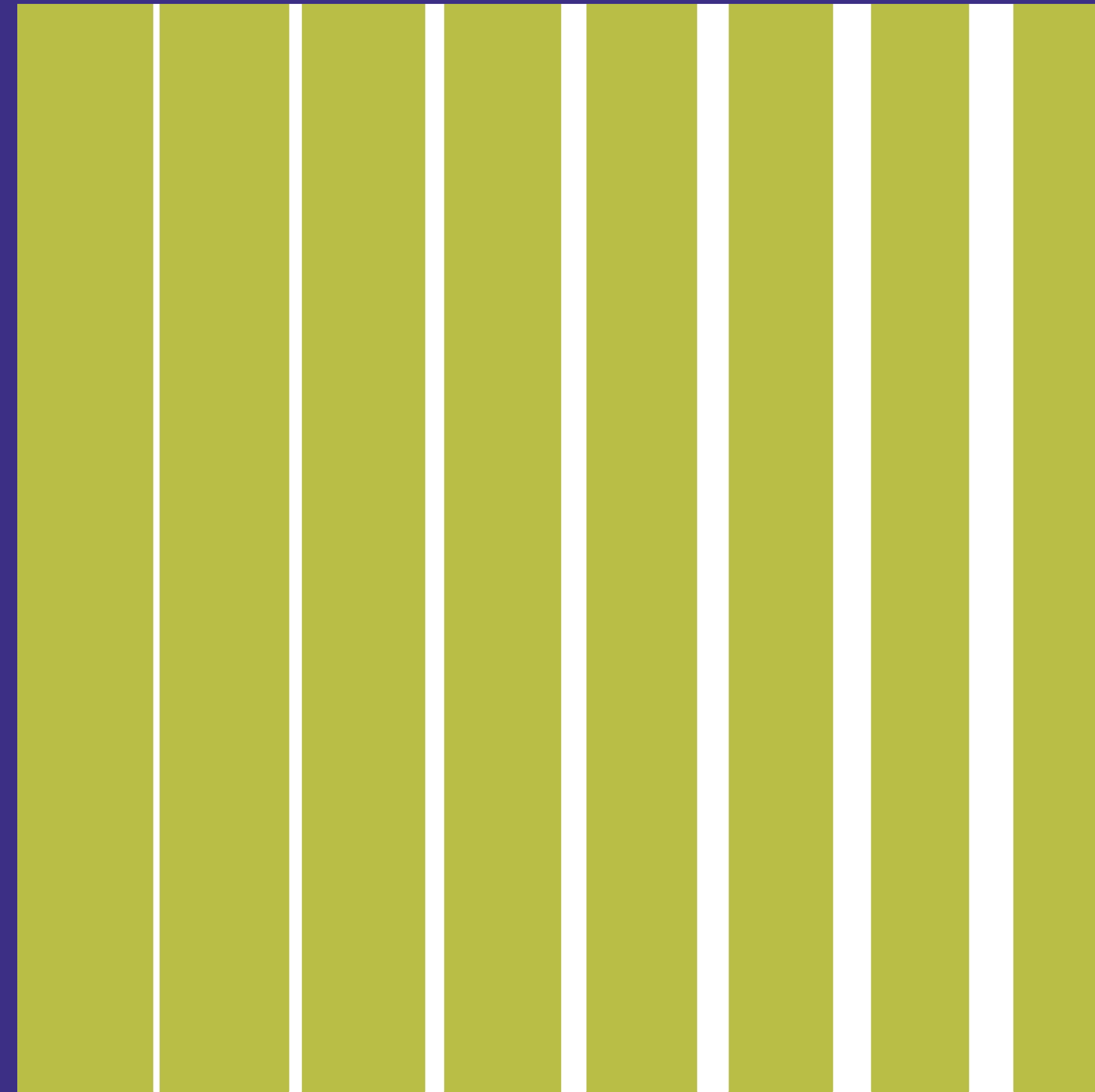
i is 2, so our
x position is
 $2 * 110 = 220$

...



example: 10 lines

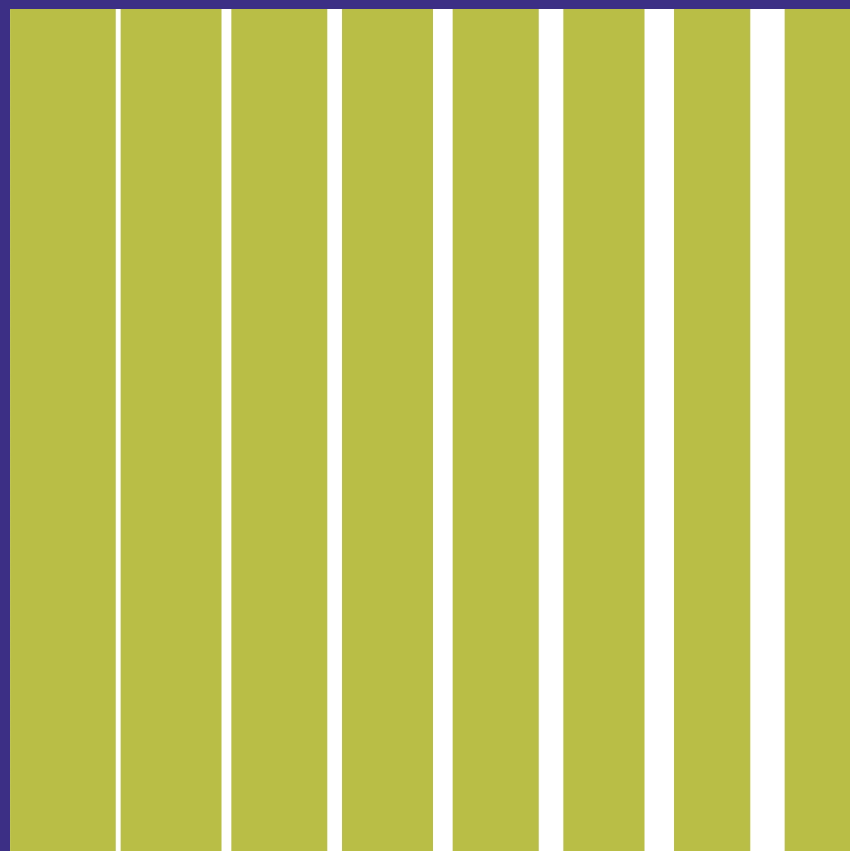
how could
this work?



$i = 0$ $i = 1$ $i = 2$ $i = 3$...

example: 10 lines

- draw **10 lines**
- use the counter **i** to move each rect more to the right and to increase the stroke weight



```
let accent = "#B8BE24"; // nice green color

function setup() {
  createCanvas(900, 900);
}

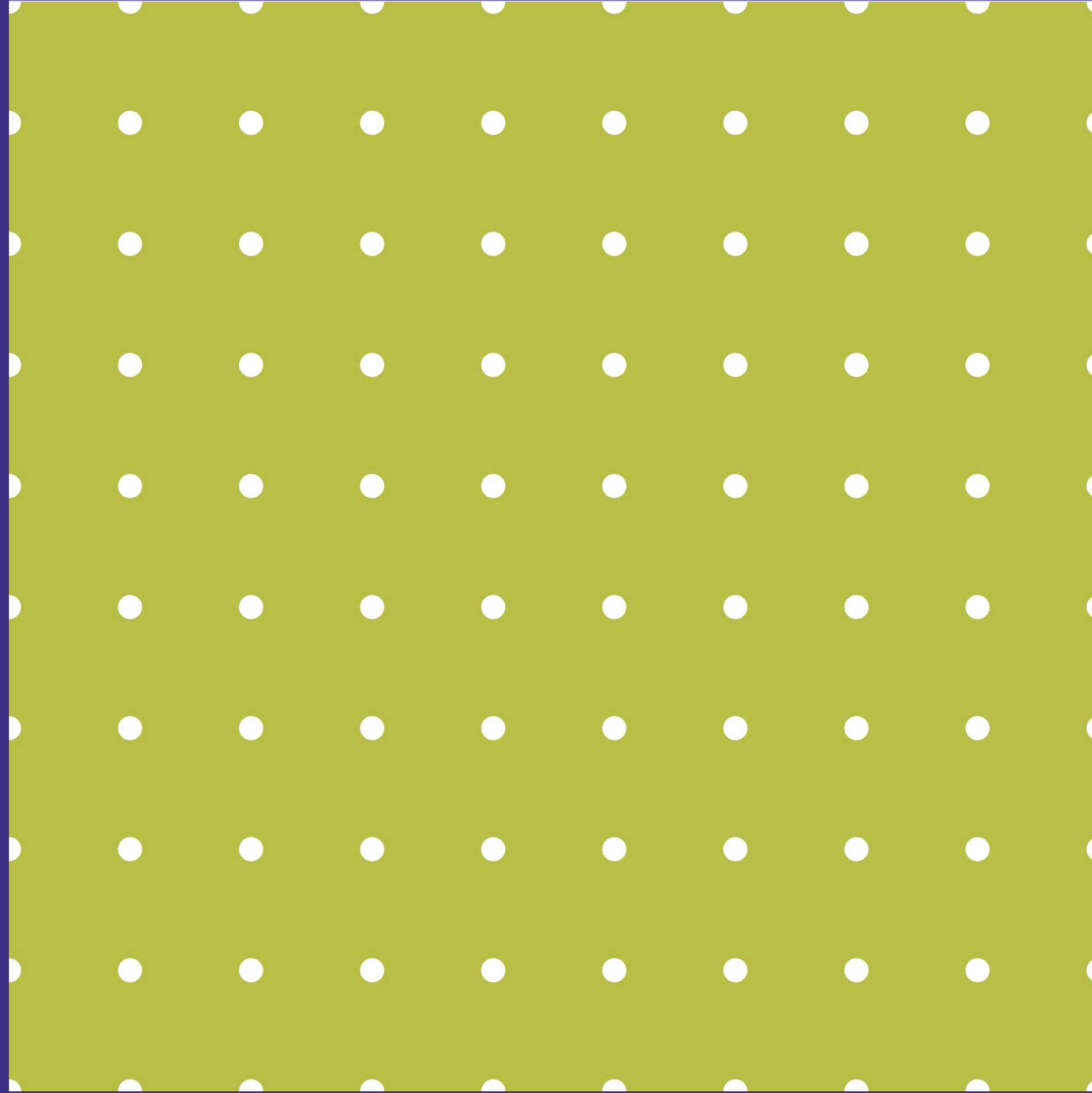
function draw() {

  background(accent);
  stroke("white");

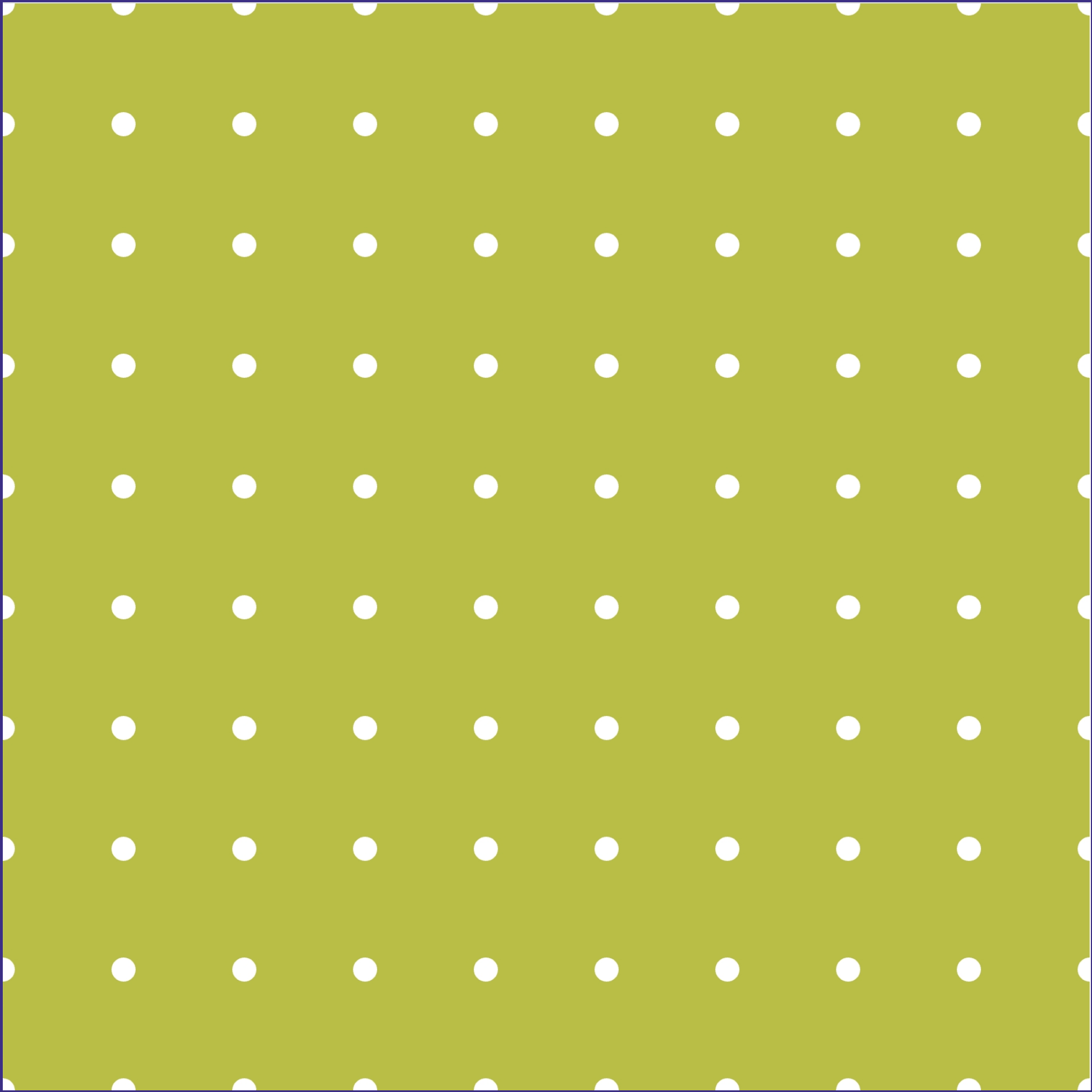
  // loop
  for (let i = 0; i < 10; i++) {
    strokeWeight(i * 5);
    line(i * 110, 0, i * 110, 900);
  }
}
```


nested loops

how could
this work?



nested loops



loop 2

$j = 0$

$j = 1$

$j = 2$

$j = 3$

...

loop 1

$i = 0$

$i = 1$

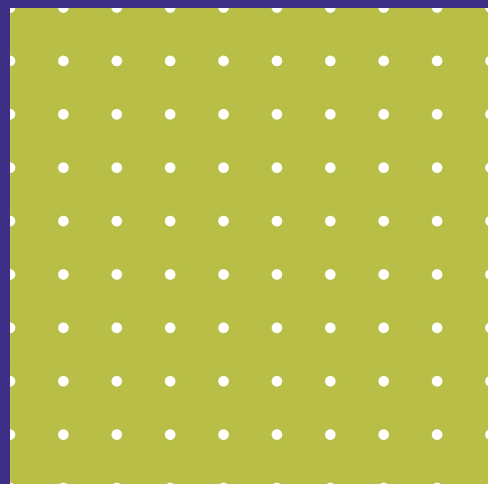
$i = 2$

$i = 3$

...

nested loops

- we have **two loops nested** inside of each other
- the **inner loop** draws ellipses from left to right
- the **outer loop** repeats the ellipse line from top to bottom



```
let accent = "#B8BE24"; // nice green color

function setup() {
  createCanvas(900, 900);
  noStroke();
}

function draw() {

  background(accent);
  fill("white");

  for (let j = 0; j < 10; j++) {
    for (let i = 0; i < 10; i++) {

      ellipse(i * 100, j * 100, 20, 20);

    }
  }
}
```

variables



variables are reusable boxes with names
and something stored inside

variables

```
let myVariable;  
myVariable = 10;  
  
let niceColor = "#fcba03";
```

// create the variable
// put something inside

// create the variable
and put something inside

variables

```
1  let myFillColor = "#f2e394";
2  let myBackgroundColor = "#47a68d";
3
4  function setup() {
5    |   createCanvas(900, 900);
6    |
7
8  function draw() {
9    |
10   |   background(myBackgroundColor);
11   |
12   |   fill(myFillColor);
13   |   ellipse(width / 2, height / 2, 100, 100);
14   |
15 }
```

variables in use for
background and fill color

image



`image(myImage, x, y, w, h);`

image

- **save** your image to your sketch **folder**
- create a **variable** to hold the image
- **preload()**
load the image from your folder
- **draw()**
place the image on the canvas

```
let myImage;

function preload(){
  myImage = loadImage("my-nice-image.jpg");
}

function setup() {
  createCanvas(900, 900);
}

function draw() {
  background(255);

  image(myImage, 0, 0, 900, 900);
}
```


text

.Aa

```
text("Aa", x, y);
```

text styling

→ size

```
textSize(20);
```

→ alignment (x, y)

```
textAlign(CENTER, CENTER);
textAlign(LEFT, TOP);
textAlign(RIGHT, BOTTOM);
```

→ fill

```
noFill();
fill("#FFBA00");
```

→ stroke

```
noStroke();
noFill();
stroke("#FFBA00");
strokeWeight(20);
```

fonts

- **save** your font to your sketch **folder**
- create a **variable** to hold the font
- **preload()**
load the font from your folder
- **textFont()**
set the font before drawing text

```
let myFont;

function preload(){
  myFont = loadFont("my-nice-font.ttf");
}

function setup() {
  createCanvas(900, 900);
  textFont(myFont);
}

function draw() {
  background(255);

  text("Meat text in nice font", 100, 0, 900, 900);
}
```