

# expand your toolbox



Introduction  
to creative  
coding



Session 2

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- variables
- mouse interactivity
- map function
- experiments

# 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

# mouse interactivity



```
rect(0, 0, mouseX, mouseY);
```

# scale rect with mouse

```

1  function setup() {
2      createCanvas(900, 900);
3      noStroke();
4  }
5
6  function draw() {
7      background("black");
8      rect(0, 0, mouseX, mouseY);
9  }
10

```

use mouse to set width and height of the rectangle



# map function

```
map(mouseX, 0, width, 0, 100);
```



# map function

```
map(mouseX, 0, width, 0, 100);
```

take this

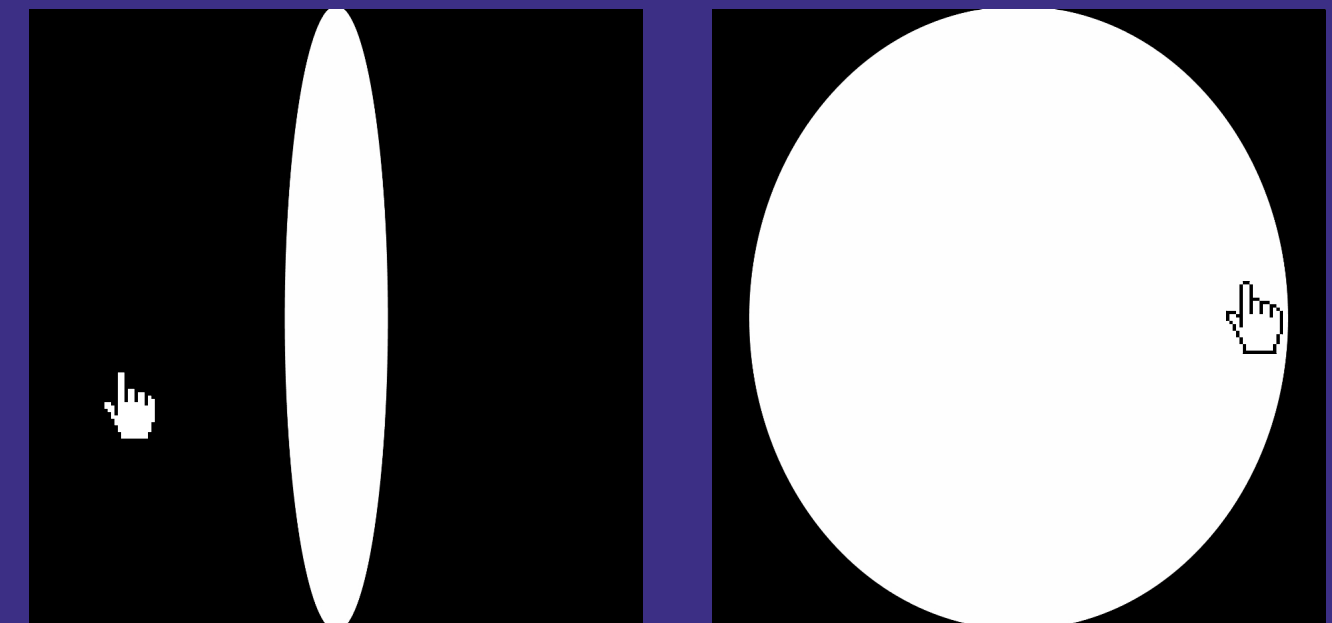
now recalculate the  
values between this range

to this range

# map function + mouse

```
1  let boxWidth;
2
3  function setup() {
4    |  createCanvas(900, 900);
5  }
6
7  function draw() {
8    |
9    |  boxWidth = map(mouseX, 0, width, 0, 500);
10   |
11   |  background("black");
12   |  ellipse(width / 2, height / 2, boxWidth, 400);
13   |
14 }
```

remap the mouse values  
to ones that we like more



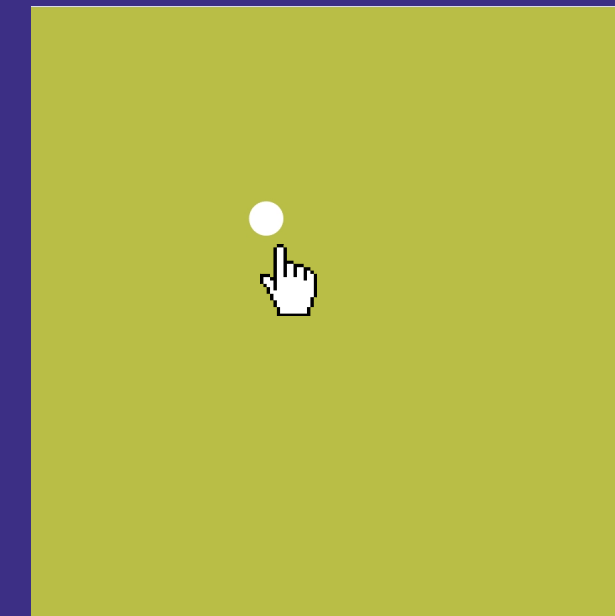
# example: ellipse as mouse cursor

```

1  let accent = "#B8BE24";
2
3  ✓ function setup() {
4      createCanvas(900, 900);
5      noStroke(); // no contour
6      noCursor(); // hide default cursor
7  }
8
9  ✓ function draw() {
10     background(accent);
11
12     // draw ellipse as mouse cursor
13     fill("white");
14     ellipse(mouseX, mouseY, 50, 50);
15 }

```

draw an ellipse at the mouse position



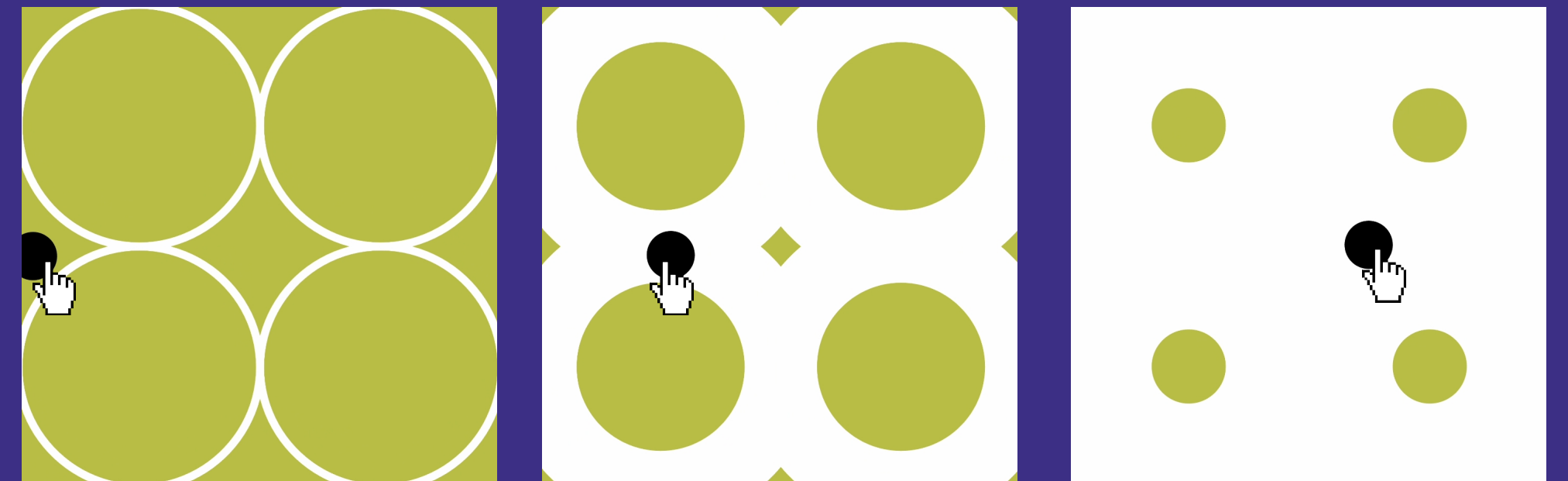
# example: interactive contour

```

1  let accent = "#B8BE24";
2
3  function setup() {
4    createCanvas(900, 900);
5    noStroke(); // no contour
6    noCursor(); // hide default cursor
7  }
8
9  function draw() {
10   background(accent);
11
12   noFill();
13   stroke("white");
14   strokeWeight(map(mouseX, 0, width, 0, 500));
15
16   // circle 1
17   ellipse(225, 225, 450, 450);
18
19   // circle 2
20   ellipse(675, 225, 450, 450);
21
22   // circle 3
23   ellipse(225, 675, 450, 450);
24
25   // circle 4
26   ellipse(675, 675, 450, 450);
27
28   // draw ellipse as mouse cursor
29   fill("black");
30   noStroke();
31   ellipse(mouseX, mouseY, 90, 90);
32 }
33

```

change the stroke weight  
with mouse movement



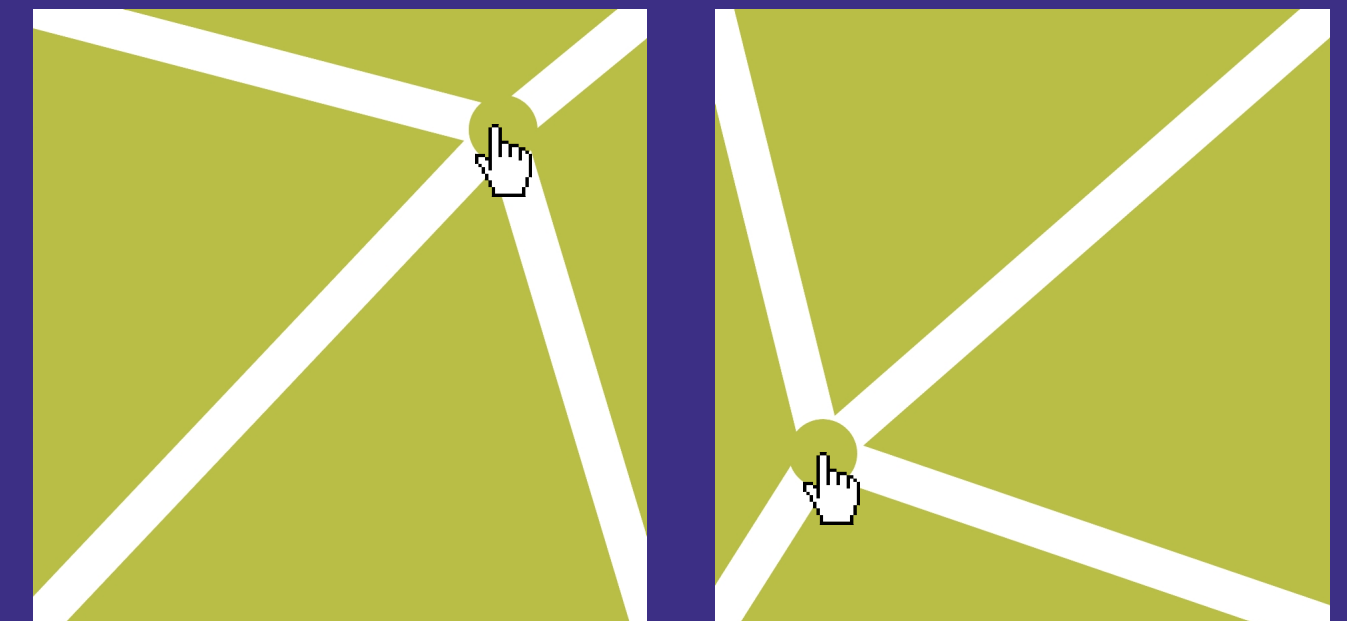
# example: interactive lines

```

1  let accent = "#B8BE24";
2
3  function setup() {
4    createCanvas(900, 900);
5    noStroke(); // no contour
6    noCursor(); // hide default cursor
7  }
8
9  function draw() {
10   background(accent);
11
12   noFill();
13   stroke("white");
14   strokeWeight(60);
15
16   // line 1 (from top left to mouse)
17   line(0, 0, mouseX, mouseY);
18
19   // line 2 (from top right to mouse)
20   line(width, 0, mouseX, mouseY);
21
22   // line 3 (from bottom left to mouse)
23   line(0, height, mouseX, mouseY);
24
25   // line 4 (from bottom right to mouse)
26   line(width, height, mouseX, mouseY);
27
28   // draw ellipse as mouse cursor
29   fill(accent);
30   noStroke();
31   ellipse(mouseX, mouseY, 100, 100);
32 }
33

```

draw lines from corners  
to the mouse position



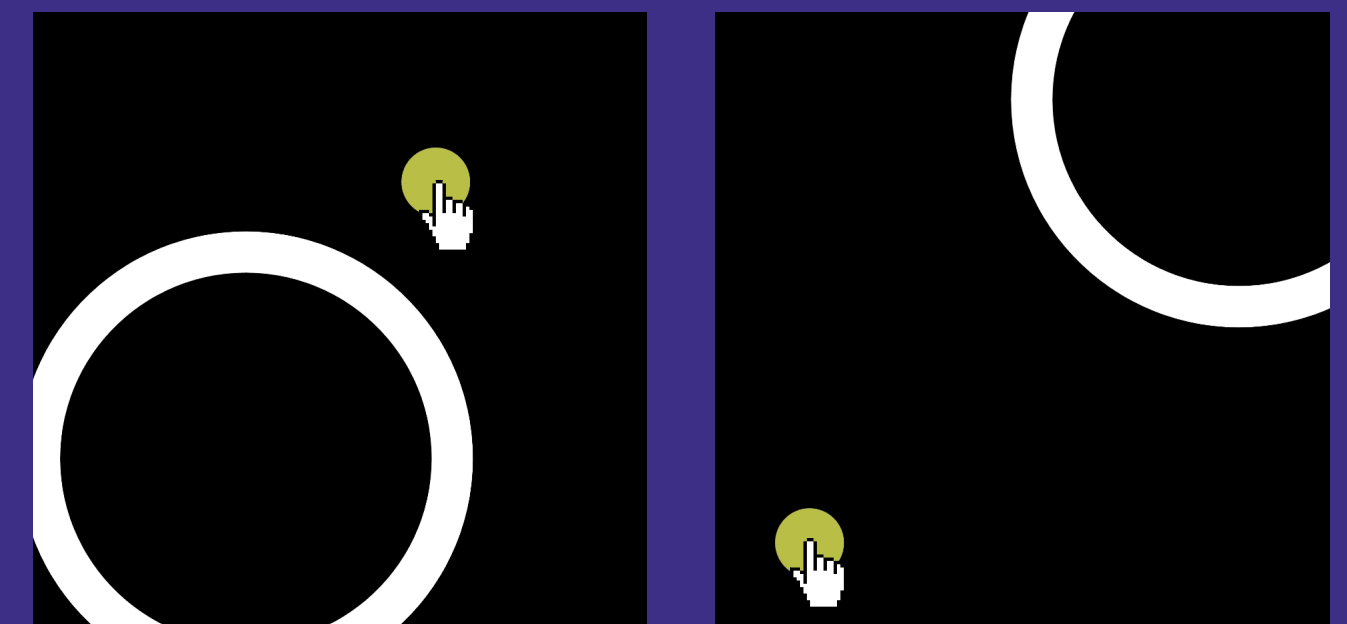
# example: avoid mouse

```

1  let accent = "#B8BE24";
2  let ellipseX;
3  let ellipseY;
4
5  function setup() {
6    createCanvas(900, 900);
7    noStroke(); // no contour
8    noCursor(); // hide default cursor
9  }
10
11 function draw() {
12   background("black");
13
14   noFill();
15   stroke("white");
16   strokeWeight(60);
17
18   // ellipse
19   ellipseX = map(mouseX, 0, width, 900, 0);
20   ellipseY = map(mouseY, 0, height, 900, 0);
21   ellipse(ellipseX, ellipseY, 600, 600);
22
23   // draw ellipse as mouse cursor
24   fill(accent);
25   noStroke();
26   ellipse(mouseX, mouseY, 100, 100);
27 }

```

ellipse position moves in  
opposite direction of mouse





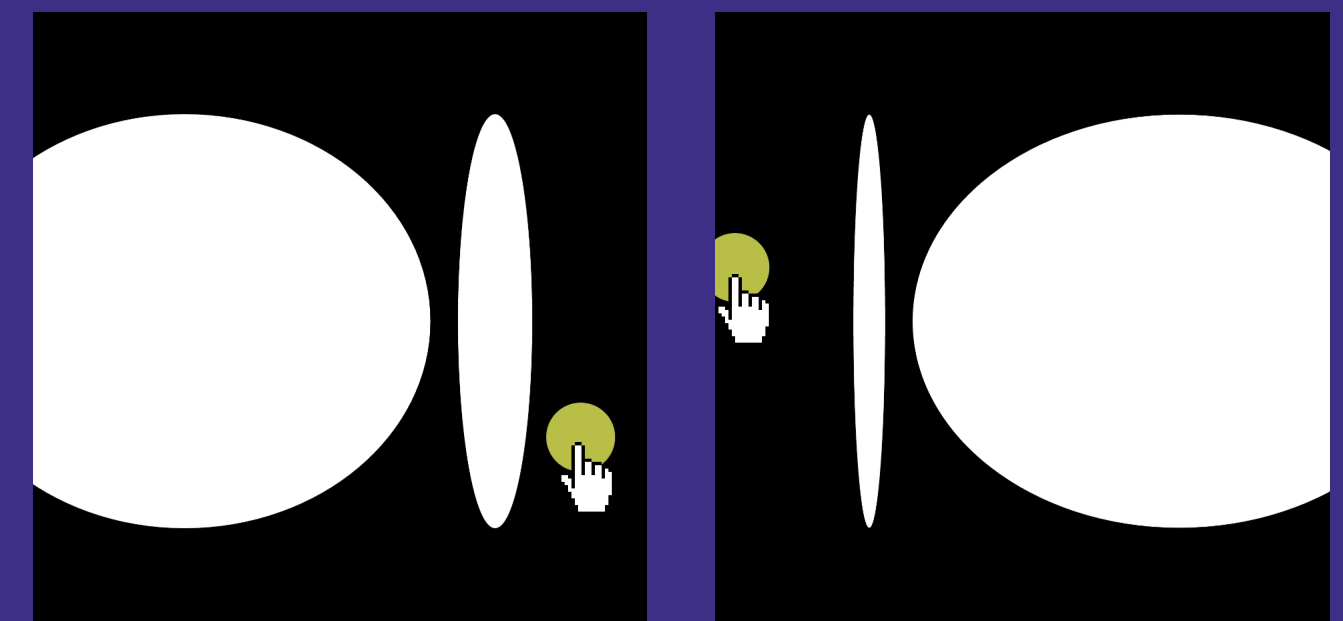
# example: two circles

```

1  let accent = "#B8BE24";
2  let ellipseSize1;
3  let ellipseSize2;
4
5  function setup() {
6    createCanvas(900, 900);
7    noStroke(); // no contour
8    noCursor(); // hide default cursor
9  }
10
11 function draw() {
12   background("black");
13
14   fill("white");
15
16   // ellipse 1
17   ellipseSize1 = map(mouseX, 0, width, 20, 800);
18   ellipse(225, 450, ellipseSize1, 600);
19
20   // ellipse 2
21   ellipseSize2 = map(mouseX, 0, width, 800, 20);
22   ellipse(675, 450, ellipseSize2, 600);
23
24   // draw ellipse as mouse cursor
25   fill(accent);
26   noStroke();
27   ellipse(mouseX, mouseY, 100, 100);
28 }
29

```

change ellipse size with  
mouse position,  
but in opposite direction



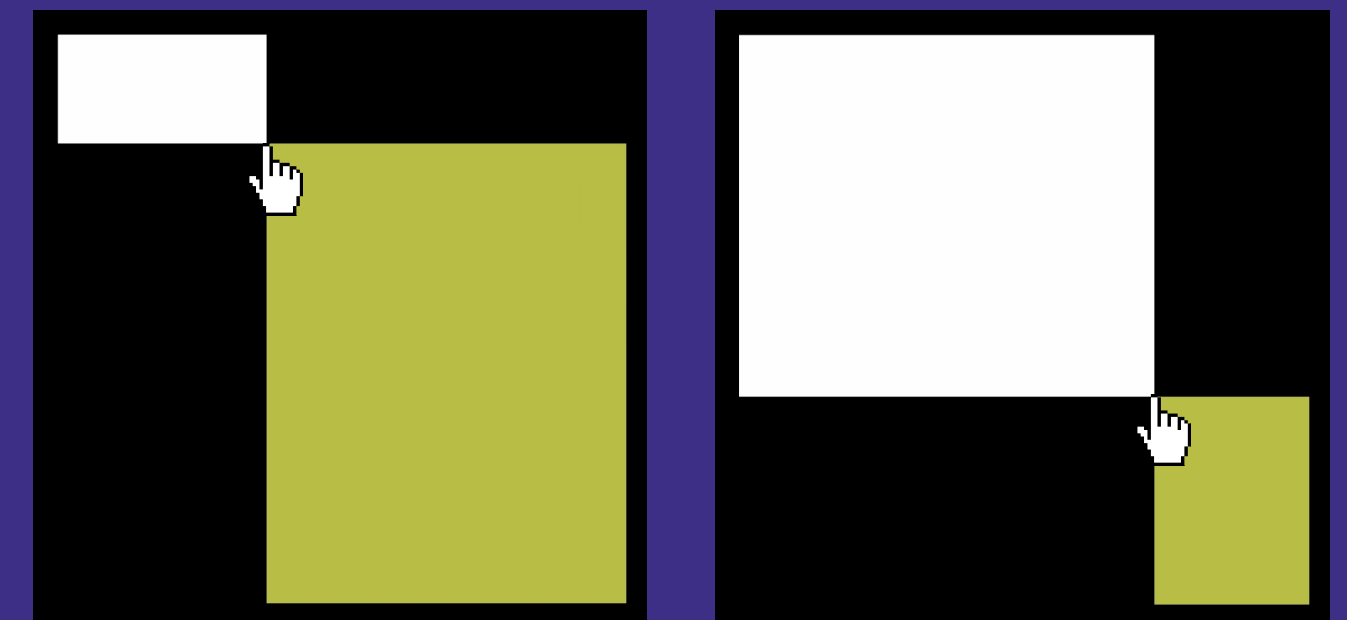
# example: two boxes

```

1  let accent = "#B8BE24";
2
3  function setup() {
4    createCanvas(900, 900);
5    noStroke(); // no contour
6    noCursor(); // hide default cursor
7  }
8
9  function draw() {
10   background("black");
11
12   // rect 1
13   fill("white");
14   rect(40, 40, mouseX - 40, mouseY - 40);
15
16   // rect 2
17   fill(accent);
18   rect(mouseX, mouseY, 900 - mouseX - 40, 900 - mouseY - 40);
19 }
20

```

change box size with  
mouse position,  
first one ends at mouse,  
second starts at mouse





# Task

- use your mouse values to modify width, height, contour, position, colors
- use only black, white and 1 accent color
- 900x900px canvas
- document 2-5 examples (screenshot or screencapture)