

today

Due: Paper sketches for Ex 3

revisit: Change the World

more on counting + code: eQuilt

Student Presentations

Reading: Ch 6

Monday, Feb 1

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Random and Transform + Generative Design

Introduce Midterm

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check out - sketch_6_4_loop_animation.pde

```
float frameW=0;
float spacing=20;
```

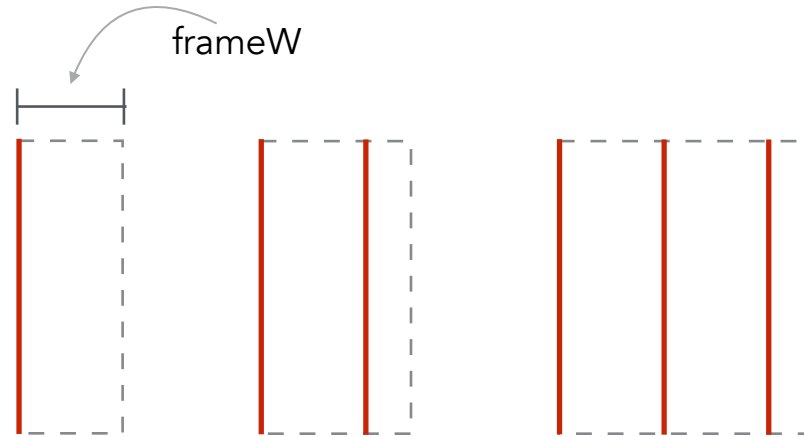
```
void setup () {
  size (600, 400);
}
```

```
void draw() {
  background(0);
  stroke(255);
```

```
  int x=0;
```

```
  while (x<frameW) {
    line(x, 0, x, height);
    x+=spacing;
  }
```

```
  frameW+=1;
}
```



initial moment: frameW=0, x=0, $x < \text{frameW}$ is false, nothing is executed
inside the while loop, frameW add 1=1.

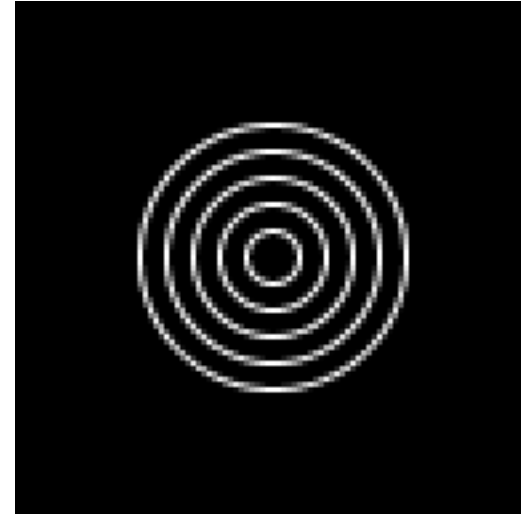
step 2: x resets to 0, $x < \text{frameW}$ is now true. Draw a line at x=0. $x = x + 20 = 20$, Still
inside the while loop - $x < \text{frameW}$ is false, comes out of the loop and frameW
+1=2.

frameW	0	1	2	3	4	...	21	22	23	...	41										
x	0	0	20	0	20	0	20	0	20	40	0	20	40	0	20	40	...	0	20	40	60
line #		1		1		1		1	2		1	2		1	2			1	2	3	

check out - sketch_6_6_concentric_circles.pde

//DRAW 5 CONCENTRIC CIRCLES

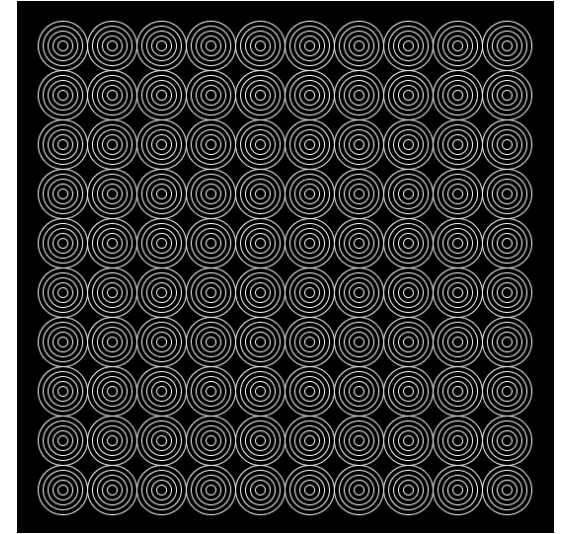
```
void setup () {  
  size (100, 100);  
  background (0);  
  ellipseMode(CENTER);  
  noFill();  
  stroke(255);  
  strokeWeight(1);  
  noLoop();  
}  
  
void draw () {  
  for (float k=0; k<5; k++) {  
    float x=50;  
    float y=50;  
    float ir=10;           //inner most circle radius  
    float spacing=10;      //radius difference between each circle  
    float r;  
  
    r=ir+spacing*k;  
    ellipse (x, y, r, r);  
  }  
}
```



check out - sketch_6_6_concentric_circle_pattern.pde

//REPEATE IN X AND Y DIRECTIONS

```
void draw () {  
  
  for (float i=0; i<10; i++) {  
    float x=50;  
    x=x+x*i;  
    for (float j=0; j<10; j++) {  
      float y=50;  
      y=y+y*j;  
      for (float k=0; k<5; k++) {  
        float ir=10;      //inner most circle radius  
        float spacing=10; //radius difference between each circle  
        float r;  
  
        r=ir+spacing*k;  
        ellipse (x, y, r, r);  
      }  
    }  
  }  
}
```



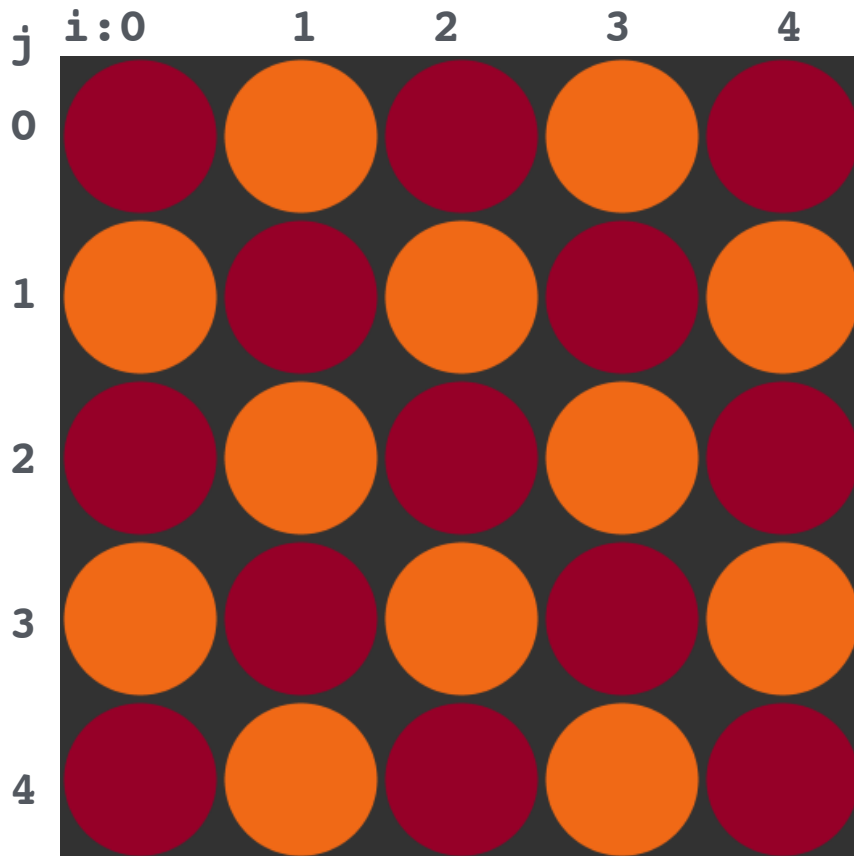
Nested Loops with ifs

//Modulo

`%` is an operator called "mod"

it returns the remainder from a mathematical division

e.g. $3 \% 2 = 1$, because $3/2$ has the remainder of 1



with this idea, I can evaluate
if something is evenly divisible.

And, do things like:

if it's divisible, then make it red;
if not, make it orange.

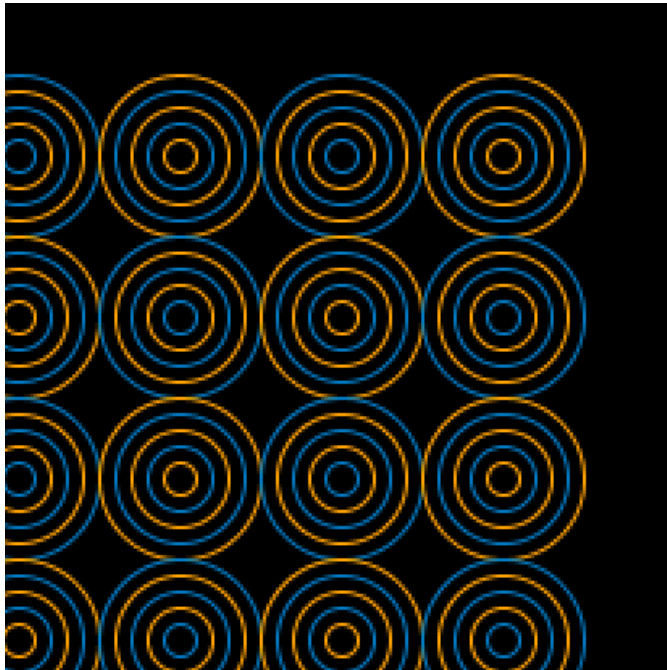
```
if ( (i+j) %2 == 0){  
    fill(255,0,0);  
} else {  
    fill(255,162,0);  
}
```

//Modulo

`%` is an operator called "mod"

it returns the remainder from division

e.g. $3 \% 1 = 1$, because $3/1$ has the remainder of 1



```
if ( (i+j+k) %2 == 0)
{
  stroke(3,124,193);
} else
{
  stroke(255,162,0);
}
```

check out - sketch_6_6_concentric_circle_pattern.pde

//Mod Example

check out - sketch_6_6_concentric_circle_pattern.pde

```
void draw () {  
  for (float i=0; i<10; i++) {  
    float x=50;  
    x=x+x*i;  
    for (float j=0; j<10; j++) {  
      float y=50;  
      y=y+y*j;  
      for (float k=0; k<5; k++) {  
        float ir=10;      //inner most circle radius  
        float spacing=10; //radius difference between each circle  
        float r;  
  
        if ( (i+j+k) %2 == 0){  
          stroke(3,124,193);  
        } else {  
          stroke(255,162,0);  
        }  
  
        r=ir+spacing*k;  
        ellipse (x, y, r, r);  
      }  
    }  
  }  
}
```


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