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APCSP, Period 1

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Lab 128: ArtOne Code

Index

```
<!DOCTYPE html>

<html>

  <head>

    <meta charset="UTF-8">

    <title>Art One</title>

    <script src="libraries/p5.js"
type="text/javascript"></script>

    <script src="libraries/p5.dom.js"
type="text/javascript"></script>

    <script src="libraries/p5.sound.js"
type="text/javascript"></script>

    <script src="sketch.js" type="text/javascript"></script>

    <script src="boids.js" type="text/javascript"></script>

    <style> body {padding: 0; margin: 0;} canvas
{vertical-align: top;} </style>

  </head>
```

```
<body>

</body>

</html>
```

Sketch

```
// Ziggy Sheynin

// Lab 128- Art One

// This is a comment

// The setup function function is called once when your program
begins

var boids = []; //initializes boids array

function setup() {

  var cnv = createCanvas(800, 800);

  cnv.position((windowWidth-width)/2, 30);

  background(5, 5, 5);

  loadBoids(60); //calls function loadBoids
}

// The draw function is called @ 30 fps

// The draw function is called @ 30 fps

function draw() {

runBoids();

}
```

```

function loadBoids(n){
  for (var i =0; i< n; i++){
    boids[i] = new Boid(random(width), random(height),
random(-1,1), random(-1,1), 40); //initializes and declares bid
objects
  }
}

function runBoids(){
  for (var i =0; i<boids.length; i++){
    boids[i].run();
  }
}

} //+++++end sketch

```

Boids

```

//Ziggy Sheynin

//Lab 128 Art One

//This is a comment

//

//

class Boid{

  constructor (x, y, dx, dy, clr){

    this.loc = createVector(x, y);

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```
this.vel = createVector(dx, dy);

this.acc = createVector(0, 1);

this.clr = color(random(255), random(255), random(255));

} //end Boids constructor


run() {

  this.render();

  this.checkEdges();

  this.update();

} //end run function


update() {

  this.vel.limit(3);

  this.loc.add(this.vel);

  this.vel.add(this.acc);

} //end update


checkEdges() { //keeps boids on screen

  if(this.loc.x<0) {

    this.loc.x=width;

  }

  if(this.loc.x>width) {
```

```

        this.loc.x=0;

    }

    if(this.loc.y<0){

        this.loc.y=height;

    }

    if(this.loc.y>height){

        this.loc.y=0;

    }

} //end checkEdges

// Either warp or bounce

render(){

    for (var i=boids.length-1; i >0; i--){ //for loop to
traverse array

        if(this.loc.dist(boids[i].loc)<200){ //checks the distance
between two boids

            stroke(this.clr); //gives the line a color

            line(this.loc.x, this.loc.y, boids[i].loc.x,boids[i].loc.y
); //draws line between two boids

        }

    }

} //end render

```

```
//This method will draw a line between its location and the
location of any other boid object within 200px.

}//+++++End Boid Class

+++++
```

